

No. 12322

United States
Court of Appeals
For the Ninth Circuit.

COMPANIA NAVIERA LIMITADA, a Corporation,
Claimant of the Motor Tanker
"URANIA," Her Engines, Tackle, Apparel,
Furniture and Equipment,

Appellant,

vs.

E. A. BLACK and J. J. FEATHERSTONE, Co-
partners doing business under the name and
style of Commercial Ship Repair,

Appellee.

Apostles on Appeal
In Four Volumes
Volume III
(Pages 935 to 1350)

Appeal from the United States District Court
Western District of Washington,
Northern Division.

FILED
JAN 4 - 1950

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(Deposition of Sidney W. Newell.)

Cross-Examination

By Mr. Hokanson:

Q. Mr. Newell, you have identified Claimant and Cross-Libellant's Exhibit O, Instruction Manual, as the manual put out by your company for use in connection with vessels propelled by Union Diesel engines, and you have stated that this exhibit is for use on the ex-navy tanker YO-73, is that correct?

A. That is correct.

Q. Should an engineer make reference to this manual in the operation of your diesel engines?

A. He should.

Q. And if he cannot read English, that manual would be of no help to him, is that correct?

A. Well, not strictly.

Q. Would you elaborate on your answer?

A. There are drawings, diagrams and charts which are, I believe, readily understandable by most engineers in most civilized countries of the world where the exact meanings or names of words don't have too great a bearing. For example, I can speak no German but I can look at German drawings and understand their intent and duplicate their [762] parts and in many ways get information of value to me though I can speak no German.

Q. With respect to the analyses of diagrams and so on, no difficulty would be encountered by an engineer who did not speak English, but he would be unable to read the legends, and I ask you whether

(Deposition of Sidney W. Newell.)

it would have been of any assistance to him where in the manual speaks at length of operating procedures?

A. Where it speaks at length of operating procedures would be of little or no value to him.

Q. Now, you earlier testified that the operating pressure on the lubricating oil side of the heat exchanger or cooler is indicated at about 20 pounds per square inch?

A. I believe about 18 pounds per square inch was the figure.

Q. I have reference now to your manual which says 20 pounds as I took it down, and which indicates the operating pressure upon the salt water side of the lubricating oil cooler at seven pounds, is that correct?

A. That is correct.

Q. And unless you increase the pressure on the salt water side so that it exceeds the pressure on the lubricating oil side, you can't get any salt water into the lubricating oil, is that correct? Assuming that there are leaks in the cooler?

A. I will state that I can't be certain in minute detail as to the pressures which will exist throughout a complicated [763] structure as a diesel engine in its entirety or in a lubricating oil cooler specifically. In other words, we measure on an engine of that type lubricating oil pressures and or all water pressures at only one or two fixed arbitrary locations. We cannot plot a curve of pressures in all places throughout a structure of the type. Maybe

(Deposition of Sidney W. Newell.)

we could but we don't do it as a normal practice, so I cannot give you a specific answer as to what will happen with the two registered pressures.

Q. My question now is, if there were leaks in this cooler, could salt water get into the lubricating oil if the salt water pressure were less than the lubricating oil pressure?"

Mr. Howard: I object that it is repetitious.

The Court: The objection is overruled.

"Q. What is your answer?

A. It cannot get to a high pressure lubricating oil zone through a comparatively small opening from a low pressure salt water zone.

Q. What is the name of the manufacturer of the lubricating [764] oil cooler which was installed on the *Urania*?

A. The lubricating oil cooler was manufactured by Harrison Radiator Division of General Motors Corporation in Lockport, New York.

Q. And what is the type of that lubricating oil cooler?

A. The lubricating oil cooler is identified as Harrison Model HE-1120-360.

Mr. Hokanson: This is off the record.

(Remarks off the record.)

Q. (By Mr. Hokanson): What is the type and manufacturer's name of the fresh water coolers on the *Urania*?

(Deposition of Sidney W. Newell.)

A. The freshwater coolers were manufactured by the same Harrison Radiator Division of General Motors Corporation in Lockport, New York, and are identified as Harrison Model HE-2120-353.

Q. How big are those coolers in outside dimensions, roughly?

A. In general, both the fresh water coolers and the lubricating oil cooler are 18 to 24 inches long, approximately 15 to 18 inches high and approximately 8 to 10 inches thick. The manufacturer quotes a dry weight of 147 pounds for each one of them.

Q. Now, you state that you tested some oil that you found in the crankcase of the Urania on November 13 to determine whether it was contaminated with water, by the use of a syringe; and the only way that you made your conclusion that [765] it was contaminated was by the taste of the oil, is that correct?

A. Well, we could see that that which we got from the bed or sump of the engine was not homogenous, namely, by putting it in a glass tumbler we would get a portion of one fluid on the bottom and another fluid on the top after we had let it settle for a minute or two.

Q. Did you do that? A. Yes, I did that.

Q. What was the percentage of water, do you know?

Mr. Howard: I object to that. He hasn't even stated that it was water. He said it was a fluid."

(Deposition of Sidney W. Newell.)

Hr. Howard: I will waive the objection.

“Q. (By Mr. Hokanson): What was the percentage of other type of fluid than oil, if you know?

A. In taking various samples in this crude syringe manner, the percentage ratio would be quite variable. There would be substantially one fluid one time and it would be the other fluid on the next sample we would take only a minute or two later.

Q. Did you examine the lubricating oil cooler?

A. I didn't except superficially, externally. [766]

Q. Did you examine the fresh water cooler?

A. I did not, except in the same manner.

Q. You don't know of your own knowledge that there were leaks in the coolers then?

A. I do not.

Q. Did anyone in your employ inspect the coolers?

Q. (By Mr. Howard): If you know.

A. I have the word of Mr. Cross'—

Mr. Howard: I object to that as a hearsay statement.

The Court: This witness had a right in the course of his business to depend on Mr. Cross' report to him.

Mr. Howard: I will withdraw my objection.

(Deposition of Sidney W. Newell.)

The Court: The objection is overruled.

“A. I have the word of Mr. Cross of whom we have already spoken and Mr. M. L. Newell, that Mr. M. L. Newell went with the lubricating oil cooler when it was taken to a repair shop which I looked up for them and he witnessed the examination and the work that was done on the cooler, so I would say that he examined the cooler. Is that what you asked me?

Q. (By Mr. Hokanson): I asked you whether anyone in [767] your employ did.

A. I would say that he examined the cooler though he might not have done the actual work. Incidentally, on the examination—he witnessed the examination.

Q. When you looked at the engine, did it have the auxiliary fire pump connected to the cooler?

Mr. Howard: To what cooler, Counsel?

Q. (By Mr. Hokanson): To the lubricating oil cooler.

A. To the best of my knowledge, there had been an auxiliary pump connected to the piping which leads to the cooler and has been ever since the vessel was first seen by me in 1943.

Q. Did that manually operated deliver extra pressure to all three coolers?

Mr. Howard: Will you read the question?

(Question read by the reporter.)

(Deposition of Sidney W. Newell.)

A. I am not acquainted with the characteristics of that auxiliary pump.

Q. (By Mr. Hokanson): Do you know from your examination whether it was so connected that it would deliver pressure to one or more of them?

A. I don't know that it was connected so that it would deliver pressure to one or all of them."

Mr. Howard: On page 53, starting with line 8, the [768] next question would be objectionable on the basis of the Court's previous ruling referring to this letter which has been offered and the objection sustained to it.

Mr. Hokanson: This line of testimony, that this testimony is based on someone else's report to him, in view of the Court's ruling, there is no need to include it here.

The Court: How far does that extend?

Mr. Hokanson: To line 9, page 54.

The Court: At that point we will resume the reading this afternoon.

Court is recessed until 1:30.

(At 12:05 p.m., Tuesday, April 12, 1949, proceedings recessed until 1:30 o'clock p.m., Tuesday, April 12, 1949.)

April 12, 1949, 1:30 o'clock p.m.

"Q. (By Mr. Hokanson): Assume, Mr. Newell, that the lubricating oil cooler was clean and hydrostatically tested for leaks before the Urania left

(Deposition of Sidney W. Newell.)

Seattle, and assume that pursuant to those tests no leaks were found, and assume further that this vessel was under way on a voyage of roughly 2,400 miles over a period of ten or eleven days, in your opinion would it be possible for the cooler to get dirty and clogged during that period?

A. The voyage was from Seattle to Manzanillo by what we would normally classify as a direct route. Is that what we are assuming?

Q. That is what we are assuming.

A. With that assumption it isn't reasonable to assume that the coolers could have become dirty in that length of time or length of voyage.

Q. But it is possible that they might have become dirty?

A. I have never heard of it happening. I would assume that anything is possible, yes, but I have never heard of that happening.

Q. Isn't it true, Mr. Newell, that a cooler of this type sucking in sea water and that extraneous matter gets into it as a matter of course requiring periodic cleaning?

A. The sea strainer with which the YO-73 is built is or was of such degree of fineness as to prevent any extraneous matter coming in with the sea water that would be large [770] enough to readily or promptly clog the cooler. It is true that a cooler as well as any other part of an engine needs to be periodically cleaned. We provide, or on installation there is provided equipment to pre-

(Deposition of Sidney W. Newell.)

vent the necessity of very frequent shutdowns. That is particularly true on marine engines where you can't afford to shut down.

Q. When coolers do get dirty, where does the dirt come from?

A. Most of the dirt that a lubricating oil cooler collects is on the lubricating oil side. It will come on the salt water side by protracted periods of operation where salt water can lie idle in the cooler and the salt water becomes so hot that a form of scale generally referred to as boiler scale will deposit on the tubes or fins or cooling members.

Q. The metal of which the fins or radiators within the cooler are made, are subject to corrosive action of sea water, is it not?

A. Yes, it is subject to the corrosive action of the sea water.

Q. Assuming that this cooler had lain idle for six months or more prior to its cleaning and that upon its cleaning it proved to be free of leaks under water pressure tests, in your opinion would the delivery of a 100 pound water pressure per square inch by use of an auxiliary pump cause leaks?"

Mr. Howard: I object to that question, the [771] assumption that the vessel had lain idle for six months. There is no proof in the record of that.

Mr. Hokanson: I have no reply to make. Mr.

(Deposition of Sidney W. Newell.)

Howard objects; I am willing to withdraw the question.

The Court: The objection is sustained.

“Q. Do you know of your own knowledge the kind of metal of which the cooler was constructed?

A. Only to this extent, they were Navy Department specification coolers. The coolers, on this name plate, and I am not certain elsewhere or not, were stamped with the mark of the Navy Department inspector in Lockport, New York, who inspected the coolers after they were manufactured. I did not analyze the material of the tubes or any other material [772] in connection with the cooler.

Q. Then you don't know of your own knowledge what the material was? A. No, sir.”

The Court: On line 17, page 57, do you wish to eliminate that? You have objected to it previously.

Mr. Hokanson: I am willing that that be stricken, Your Honor.

The Court: From line 17, page 57, down to where?

Mr. Hokanson: Down to line 18, page 58.

The Court: Is there any objection?

Mr. Howard: No objection.

The Court: That is stricken down to that point. You may proceed.

(Deposition of Sidney W. Newell.)

“Q. Now, if we assume that the lubricating oil was contaminated with some other fluid, salt water or fresh water, as the case may be, to the extent that you found in the crankcase on November 12th, are there any gauges on the engine which would reflect that condition?

A. What kind of water, you said either fresh or salt water?

Q. That is right, it appears from your testimony or what has gone on before here, that both fresh water and salt water [773] conceivably could have gotten into the lubricating oil.

A. The only gauges that might lead an operating engineer to know that water had gotten into his lubricating oil are rather indirect gauges. For example, there is normally a gauge on the fresh water surge tank which indicates the amount of surplus fresh water in the system. That varies from time to time and the purpose of that gauge is to indicate that the fresh water has left the surge tank. Where it has gone no one knows. There are many places where it could go. Similarly on the lubricating oil day tank, there are gauges or measuring devices of one sort or another which enables the operating engineer to have some indication as to the height of the fluid in his lubricating oil day tank. He, of course, cannot know what those fluids are in his tank and they, too, are subject to variation, but either or both of those gauges or measuring devices might

(Deposition of Sidney W. Newell.)

warn an operating engineer that something had changed in his lubricating system.

He has to make a lot of assumptions like we have had to make a lot of assumptions here to try to put all of the data together and come up with the answer. There are no direct measuring devices that would tell him, no red light that would turn on and say, "You have water in your oil," or anything of that nature.

Q. But there is an indicator showing the level of your oil, is that correct? [774]

A. There is some indicator. I am not sure of the detail of it, but I have never seen a lubricating oil day tank that does not have some method of taking a sounding as to the quantity of the contents of the lubricating oil day tank.

Q. If water or some other fluid were to get into the oil to such an extent as to contaminate it, it would cause the oil there to arise, wouldn't it?

A. Not necessarily. It would appear to be so, but we find from experience that we burn lubricating oil when an engine operates. We find that a large engine of this type takes many hours to get warm and reach a static condition, variations in engine room temperature, variations in sea water, things of that nature will vary the amount of oil that will appear in the lubricating oil day tank.

Q. The matters that you have referred to would not in the main cause the oil level to recede rather than rise, isn't that correct?

(Deposition of Sidney W. Newell.)

A. No, that is not true. We find that on a rising temperature the lubricating oil in the day tank is increased. On a lowering temperature the oil in the day tank diminishes.

Q. Would the condition that you found at Long Beach, that is, the amount of contamination that you found, in your opinion have caused the oil level to rise? A. I cannot be sure.

Q. Adverting now just to another matter out of order, you [775] have identified for the Cross-libelant a print of this engine which has been marked Exhibit R for Identification and you have stated that you gave a copy of that print to two men from Commercial Ship Repair or two men who identified themselves as representatives of Commercial Ship Repair. Do you know when you gave them to them?"

Mr. Howard: Your Honor, that is the large drawing that was not available this morning. We did not have it marked for identification then. I ask leave to have it marked for identification now.

The Court: You may do that.

(Diagram marked Respondent's Exhibit A-19 for Identification.)

"A. I don't recall having made any note as to the date. The approximate date was ten days ago.

(Deposition of Sidney W. Newell.)

Q. Approximately ten days ago? A. Yes.

Q. You have stated in your opinion that the contamination of oil that you found in the crank-case of the Urania was a cause of the breakdown of the timing gears, is that correct?

A. That is correct.

Q. Is the main propelling engine of the Urania lubricated entirely by the same lubricating oil? [776]

A. Entirely by the same lubricating oil? No, sir.

Q. Is the crankshaft lubricated by the same oil which lubricates the timing gears?

A. Yes, sir.

Q. Is the camshaft lubricated by the same oil that lubricates the timing gears? A. Yes, sir.

Q. In your opinion is there any other cause besides the contamination of the oil for the breakdown of the timing gears?

Mr. Howard: You are referring to the first breakdown?

Q. (By Mr. Hokanson: Let's relate this question to the first breakdown.

A. Nothing that I recall.

Q. From your observation?

A. I did not see the vessel after the first breakdown prior to the second breakdown. I did not see the vessel between the time of the first breakdown and the second breakdown.

Q. Is it your opinion that there is any other contributing cause to the second breakdown?

A. No, sir.

(Deposition of Sidney W. Newell.)

Q. Now, the helical timing gears are made of steel or cast iron, is that true? A. Yes, sir.

Q. And your main bearings are babbitt lined or made of white metal, is that correct?

A. They are lined with babbitt or white metal.

Q. And the degree of friction, weight and thrust which is carried by the main bearings is infinitely greater than the [777] friction and weight carried by the timing gears, isn't that true?

A. That is not correct.

Q. Would you elaborate on your answer?

A. In a helical gear or a pair of helical gears transmitting any load the pressure is infinite. We know from a practical point of view that nothing will stand an infinite pressure, so we realize that rather than having only a point contact which is the theoretical bearing which exists in a pair of helical gears we actually have a surface. Also we know that on our main bearings we have a substantial area which carries a total force, but since we have an area to carry a force we have a lower unit pressure than we do where we only have a point to carry of force.

Q. Now, the burden which the vertical shaft carries is the burden of operating the camshaft, is that true? A. Yes.

Q. Which in turn operates the valves?

A. That is correct, it also operates other auxiliaries which I have mentioned before; namely, the

(Deposition of Sidney W. Newell.)

fuel pump, the lubricating oil pump, the governor, perhaps one or two others.

Q. And isn't it true that steel or cast iron is less susceptible of galling than white metal, assuming the weight is carried?

A. I would say that the susceptibility to galling is difficult to accurately understand, and many engineers argue [778] loud and long both ways on that. I certainly couldn't draw a definite conclusion from that.

Q. Which is harder, steel or babbitt?

A. Steel is, particularly as exemplified in these gears. It is much harder than babbitt.

Q. How much harder?

A. Is it sufficient if I say many times harder?

Q. That will do. Now, in your inspection of the Urania, did you look at the main and crank bearings?

A. I saw a few bearings that were out. I didn't examine all of them.

Q. Were they galled?

A. No, they looked in good shape.

Q. In other words, the only gears that were affected were the timing gears?

A. To the best of my knowledge that is correct.

Q. And they were all lubricated by the same oil?

A. That is correct.

Q. And yet you would say that the contaminated oil, not affecting any other bearings which bear

(Deposition of Sidney W. Newell.)

the main weight of the engine nevertheless caused the galling of the timing gears?

A. Yes, that is correct.

Q. How would that be possible?

A. We have discussed the relationship which exists between pressures in a bearing, be it main or connecting rod, and [779] the pressures which exist on a helical gear.

Since the pressures encountered on helical gears are much, much greater than those which exist on a cylindrical bearing, an oil film, or lubricating film, be it water or air or anything else, will break down under a pressure. The higher that pressure the greater the tendency of that film to break down. Since the film strength would be approximately the same in the bearing as in the gear because we are using the same lubricant but its finite film strength can be broken by a greater pressure and since the greater pressures exist in the gears, I know from experience that that film strength can be exceeded in helical gears where it will not be exceeded under the same conditions in the bearings.

Q. As I understand your answer, Mr. Newell, you are suggesting by reason of the greater surface of the other bearings, the main bearings, et cetera, the degree of weight or pressure is less and consequently by virtue of that ratio, the timing gears have a greater weight to carry because they are smaller, is that correct?

A. An engineer differentiates between weight or

(Deposition of Sidney W. Newell.)

force and pressure. The definition of pressure, as I used the word pressure, is the weight or force per unit area, therefore the timing gears have a greater pressure even though the total force or weight may be less. [780]

Q. Well, you say, may be less. Could you state from your knowledge of this engine what the difference is in weight carried by the timing gears and the weight carried by, for instance your main bearings, your thrust bearings, and your journal and crank bearings?

Q. Do you mean weight or do you mean pressure, sir? A. Let's take weight first.

Q. According to the definition of weight, as I understand it, it is the attraction of gravity for any part. On that basis there is no weight for any of the helical gears to support.

Q. Let's consider it in terms of pressure now.

A. In terms of pressure, the pressures which the helical gears have to contend with are at least fifty times and perhaps one hundred times as much as the pressures which we find are imposed on the main bearings of the engine under discussion.

Q. (By Mr. Howard): Fifty to a hundred?

A. Fifty to a hundred times.

Q. (By Mr. Hokanson): How long can helical gears of the type we have under consideration here run without galling, without any lubrication at all?

A. They will begin to show evidence of distress

(Deposition of Sidney W. Newell.)

in less than an hour's operation without any lubrication at all.

Mr. Howard: Excuse me. You are speaking of oil [781] lubrication?

Q. (By Mr. Hokanson): Without any lubrication at all was the question.

A. We are disregarding air as a lubricant for the moment.

Q. Have you completed your answer to the question?

A. Yes, I said one hour, that is my answer.

Q. Assuming you had water only as a lubricant, how long would the helical gears withstand galling?

A. Substantially no different length of time would be noted in the gears being operated with water at a lubricant or being run dry.

Q. Normally the course of wearing in a helical gear is caused by misalignment, isn't it?

A. I can't speak of helical gears in general because I only know helical gears as they apply to certain limited applications.

Q. And with respect to the helical timing gears on the Urania, could the galling or weakening of those gears be caused by misalignment?

A. I don't believe that is physically possible.

Q. If there were a bend in the shaft, would it cause galling?

A. I don't believe that it is possible for the vertical shaft to be bent enough laterally or otherwise to have caused galling in the helical gears. [782]

(Deposition of Sidney W. Newell.)

Q. These gears operate on the principle of meshing, don't they? A. That is correct.

Q. Would those gears cut each other if they were not properly aligned?

A. Within any limits that I can envision in an engine such as is in the *Urania* it would not be possible to misalign the gears to the extent where they would cause cutting one upon the other."

Mr. Hokanson: I move to strike the answer as not responsive. I asked him whether the gears would cut each other if they were not properly aligned. The witness then does not answer the question.

The Court: The objection is overruled.

"Q. It would not be possible to misalign them to that extent?

A. It would be possible if you wanted to use an interpretation of the word alignment to include the backlash that was set in the gears. It would be possible to set the gears so that the bearing pressures which we have discussed would be sufficiently high as to cause a breakdown of the oil film and permit galling to occur, but on the engine such as the [783] one in the *Urania*, the locking devices for the gears are installed in the factory to prevent this unsatisfactory meshing of which I have just spoken.

(Deposition of Sidney W. Newell.)

Q. Let me ask you this, is there any adjustment on the thrust or carrier bearing of the vertical shaft which if worn or not properly adjusted would allow the shaft to move and allow the gears to crowd together and wear excessively?

A. There is an adjustment which I have already mentioned which is taken care of in the factory at the time the engine is built that could be improperly initially adjusted, but which is not subject to any later alteration.

Q. When the engine is running ahead with this type of spiral or helical gears on the vertical shaft, does it tend to lift it or lower it?

A. I am not sure on this particular engine which way the lower vertical shaft gears thrust when the engine is in the ahead running position.

Q. You don't know whether it is up or down?

A. I am not sure whether it is up or down.

Q. What arrangements are there for keeping the vertical shaft in proper position so that the gears will at all times properly mesh?

A. Referring again to figure 21, entitled, Vertical shaft thrust bearing, on page 60 of the instruction book, Exhibit O, you will recall that we have two basic types of bearing, [784] one is the babbitt lined radial bearing and the other is the duplex ball roller or anti-friction bearing. The first or babbitt bearing takes care of the radial load on the vertical shaft, whereas the anti-friction bearings

(Deposition of Sidney W. Newell.)

take care of the vertical load that may be imposed on the vertical shaft.

Q. The filters that you have referred are for the purpose of removing extraneous matter from the lubricating oil, is that correct?

A. Yes, that is correct.

Q. And if removed, does a filter show signs of extraneous matter upon internal examination?

A. Yes.

Q. Will it show salt water? A. Yes.

Q. What did you do at Long Beach when you went there, Mr. Newell, on the Urania, if anything?

Mr. Howard: I object to the question on the ground the witness has already stated what he did when he went on the vessel. Did you want him to answer it?"

Mr. Howard: I will waive the objection.

"A. I tried to find what I felt was the basic cause of the troubles that had been encountered.

Q. (By Mr. Hokanson): How many days were you there?

A. I was there on the afternoon and evening of Friday, [785] November 12th and Saturday morning, November 13th, 1948.

Q. Your presence on the vessel was merely an inspection tour? A. Yes.

(Deposition of Sidney W. Newell.)

Q. Now, when Mr. Cross was in the *Urania*, you had telephone conversations with him, is that right?

A. That is correct.

Q. Is Mr. Cross an engineer?

A. Mr. Cross is the foreman of our assembly department at the factory.

Q. Is he an engineer?

A. Under some definitions of the word engineer, he is an engineer. By training he is a mechanist, a tool maker and an operating engineer.

Q. Why was it necessary to talk to him by long distance telephone?

A. Because I wanted to do everything that I could to contribute my own opinion, my own experience as to what they may have encountered. I am always apprehensive at sending a man to sea and particularly so when a man is going to sea on a vessel that has had trouble. I feel morally responsible for his well being and his safe return. I felt that by telephoning him I could help him get the vessel and himself home.

Q. You had some question about his ability to effect these repairs, did you?

A. Oh, none at all. [786]

Q. You have included the cost of these telephone calls in your bill to the Cross-libelant in this case?

A. Yes, that is correct.

Q. Now you have stated that you did not preserve any of the parts that were removed or replaced on the *Urania*. Why not?

(Deposition of Sidney W. Newell.)

A. They were not our parts.

Q. Do you know what was done with them?

A. I do not.

Q. Did you know that there was litigation involving the *Urania* at the time these repairs were made by your company?

A. To the best of my knowledge there was none at that time.

Q. Were you ever advised by the *Compania Naviera Limitada* or any of its representatives at or prior to the time that you inspected the *Urania* in Long Beach that repairs had been made on this vessel at Seattle?

A. Yes, I knew that repairs had been made on the vessel in the Seattle area.

Q. Did you ever talk to Mr. Demetri Antippas?

A. Yes, I talked to Demetri Antippas.

Q. When?

A. I first met Mr. Antippas on Saturday, November 6th, 1948. I do not recall whether I talked to Mr. Antippas on the telephone prior to that date or not. Subsequent to that date I have talked with Mr. Antippas many times. [787]

Q. Had you ever discussed with him the fact that, or did he ever discuss with you the fact that he was preferring a claim against Commercial Ship Repair based upon this breakdown?

A. On Saturday, November 13th, Mr. Antippas took me in the automobile which he had use of from the *Urania* to uptown Los Angeles. At that

(Deposition of Sidney W. Newell.)

time he mentioned that there was a possibility that there might be some kickbacks to the people who had overhauled the vessel in Seattle. I do not recall that he mentioned who the parties involved were or that there was going to be any legal action. He merely expressed dissatisfaction and intimated that he was going to endeavor make redress of one sort or another.

Q. Did you ever discuss the same matter with him at any other time?

A. No, I have never discussed the matter with him. We received a letter some place along the line.

Q. Do you have that letter with you?

A. I don't have the record with me, advising the Union Diesel Engine Company that there was litigation at least pending concerning this work.

Q. That was the extent of your conversation or correspondence with him concerning the matter of litigation?

A. To the best of my recollection that is all there was with the addition that at one time I notified what I thought were both sides of the concern that since there appeared to [788] be pending litigation we had better not talk any more about it.

Q. Now, referring to Exhibit P-3 for Identification, your invoice to Compania Naviera Limitada, you charge for the services of Engineer Cross October 28th to November 11th, fifteen days, \$30.00 a day. You there describe him as an engineer. If he is not an engineer, why did you so describe him?

(Deposition of Sidney W. Newell.)

A. I object, sir, to you putting words in my mouth that I did not describe him as an engineer. I tried to make careful the fact of what type of engineer he might be classified as. I believe that Mr. Cross is a competent operating engineer.

Q. And that is the reason you designate him in the invoice as an engineer?

A. In our practice when we send a man out to do service work, adjustment work, the general type of work that was done on the *Urania*, we classify all of those men as service engineers. Ordinarily we would just refer to them as engineers because it is a very broad term that can cover most anything.

Q. Now, on November 3rd, you list a telephone call to the *Urania* \$23.50, that is on page P-4. Was that a long call?

A. Yes, that was quite a long call.

Q. What did that relate to, if you remember?

A. As I recall that call or group of calls, they concerned [789] themselves with Mr. Cross advising first that the vessel seemed to be running satisfactorily, then later that the vessel was not running satisfactorily, then that he had decided that it was necessary to get a tow. Then I had to look up on the charts and see where I thought they were and try to tell them what fishing points I knew of where fishing boats take protection and finally there was a call, Mr. Cross told me of many of the things that he would need when the vessel got in. Now, as

(Deposition of Sidney W. Newell.)

I have intimated, I can't be certain that that was November 3rd, but it was very close to it and because of the size of the call I imagine that that is what the call or calls concerned themselves with.

Q. Did Mr. Cross ever tell you in these telephone conversations you had with him while he was aboard the *Urania* what the cause of that breakdown was?"

Mr. Howard: I object to that question as asking for a hearsay answer.

Mr. Hokanson: I offer it for the purpose of establishing whether there was a discussion between Mr. Newell and his serviceman that he had sent aboard, Your Honor, and whether an effort was made to get at the basic cause of the trouble. [790]

The Court: The objection is overruled.

"A. Mr. Cross and I discussed on several occasions over the radiophone what the seemingly probable cause of the troubles was.

Q. What was his idea of the cause, Mr. Newell?

Mr. Howard: The same objection."

Mr. Howard: My objection continues to this line of questioning.

Mr. Hokanson: The same ruling, Your Honor?

The Court: I think so. It is cross-examination.

(Deposition of Sidney W. Newell.)

“A. The chief thing that Mr. Cross pointed out was that the lubricating oil was brown and we agreed that the only thing that we knew that would make the lubricating oil become this characteristic brown was water in the oil.

Q. Did you suggest anything that he should do with respect to the oil?

A. I told him to dump his lubricating oil and put in new lubricating oil.

Q. And assuming that he put in new lubricating oil prior [791] to the second test after the first breakdown?

Mr. Howard: The second test?

Mr. Hokanson: I will reframe the question.

Q. (By Mr. Hokanson): Assuming that the lubricating oil had been replaced with new oil and assuming further that there were some leaks in the lubricating oil cooler, in your opinion could the timing gears wear out in 36 hours under those conditions?

A. Yes, they would have no trouble wearing out in 36 hours. They could wear out readily in 36 hours if there was water in the oil.

Q. Assuming that we start with new lubricating oil before that trip? A. Yes.

Q. Now, did you furnish any parts to the *Urania* which were not worn out by what you describe as contaminated oil? A. Oh, yes, sir.

Mr. Howard: When are you referring to, Counsel? Are you referring to the parts on the invoice identified as P or Q?

(Deposition of Sidney W. Newell.)

Mr. Hokanson: That is right, Exhibit P only.

Q. (By Mr. Hokanson): Why would it be necessary, for instance, to furnish a lubricating oil manifold branch pipe?

A. Two lubricating oil manifold branch pipes could be necessary because it is difficult and in some cases impossible [792] to take out some of the small pieces of an engine without damaging them and the men went in to check the bearings, to check the lubricating oil system, to make certain that there were no troubles there and apparently Mr. Cross found that two of the branch lines were in need of replacement when they started to put the engine back together again.

Q. Did you ever furnish a new vertical shaft?

A. I believe we did. I can't be certain of that.

Q. You can refer to the exhibit.

A. If you give me the invoice I will tell you yes or no.

Q. All right, I will show you the invoice.

A. Apparently no new vertical shaft was supplied.

Q. Why would it be necessary to replace twelve filter elements?

A. Because they had become dirty, clogged and no longer serviceable.

Q. And why would it be necessary to install additional lubricating oil lines to these gears?

A. We have found that we can put on lubrication in very many different ways with seemingly

(Deposition of Sidney W. Newell.)

the same general results, so we will frequently put on two or three different ways either one of which from experience we know will work satisfactorily just as an added measure of precaution.

Q. You did put on additional lubricating oil lines to the gears in question, is that correct? [793]

A. I instructed the men who were on there to put at least one more lubricating oil line on to some of the gears.

Q. You mean before the ship arrived at Los Angeles?

A. I would imagine so. I can't be certain of that. If I thought of it I would have told them to.

Q. As a matter of fact, assuming that Mr. Cross did install additional lubricating oil lines and assuming further that he was aware that the oil appeared to be of a different color, would that be good practice?

A. Would what be good practice?

Q. Putting on additional lubricating oil lines to the gears that were apparently affected here?

A. Oh, yes, sir. We believe that no wearing part can be too well lubricated.

Q. But if the lubrication was contaminated and wouldn't service the part properly, would adding more of the same contaminated oil to those gears help in any way?

Mr. Howard: You are asking his opinion on that, Counsel?

Mr. Hokanson: I asked the question, yes.

(Deposition of Sidney W. Newell.)

The Witness: Would it help was the question?

Q. (By Mr. Hokanson): Yes.

A. I am afraid that nothing would help. More lubricating oil lines wouldn't do any more than the lubricating oil line that were put in the engine as we originally built it. [794]

Q. So that assuming that it was known to Mr. Cross that there was something wrong with the oil and assuming further that he added additional oil lines to these gears, he would be working at cross purposes in frustrating his one opportunity to make proper repairs, isn't that true?

A. No, sir, it is not.

Q. What is the case then?

A. You will have to get your case in some semblance of order before I can give an answer to that. I am sorry, but that is the fact.

Q. You decline to answer the question?

A. Will you let me answer the question?

Q. I have asked it.

A. The vessel ran, to the best of my knowledge, satisfactorily for a number of years with the lubrication system that was installed in the vessel prior to the time Mr. Cross went aboard it in Manzanillo for the first time. The changes which he made, if any, to the lubrication system, so far as these gears were concerned, was in our experience at least as good and probably a better system than the one which had functioned satisfactorily before. It is not working at cross purposes to add to gears of

(Deposition of Sidney W. Newell.)

that nature more lubricant. If the lubricant is not capable of operating satisfactorily under the loads that are imposed upon them, more of that lubricant will not do any good, but it is not working at [795] cross purposes to add more lubricating oil to the gears.

Q. What Mr. Cross should have done was to get at the cause of the contamination of oil, isn't that correct?

A. That was not what Mr. Cross was sent there to do.

Q. What was he sent there to do?

A. Mr. Cross was sent there to Manzanillo to check the operation and to return to Los Angeles with the vessel.

Q. I note, Mr. Newell, that you have made direct reference to a document there. Do you have a recollection independent of that piece of paper from which you have testified or do you rely on the notes that you made there?

A. I remember quite definitely that I sent Mr. Cross to Manzanillo to put in the gears. We were neither authorized or requested nor was Mr. Cross instructed to endeavor to tear the unit down so far as he might have to find out what the cause of the trouble was or to make whatever changes he felt were desirable.

Q. So that he was given specific instructions and beyond carrying those out he had no discretion, is that correct?

A. That is correct.

(Deposition of Sidney W. Newell.)

Q. Now, having made these repairs, if you know, why was the vessel returned to Los Angeles rather than directed on its voyage to Panama?

A. I don't know.

Q. Now, some difficulty was experienced with the governor, wasn't it, by Mr. Cross? [796]

A. Yes, some trouble was experienced with the governor.

Q. What was the matter with the governor?

A. The vertical shaft was forced to operate most erratically when the gears and the related parts were worn out with the net result that the governor which is located on the vertical shaft was forced to operate most unnormally and it wore itself out badly or at least to the extent that when repairs were later made it was quite apparent that the governor should be replaced, reconditioned, in general fixed up.

Q. Now, if you have a variation in the r.p.m. of your engine, let's say from 325 down to 240 and back again, at intervals, would that be caused by difficulties with the governor? A. No, sir.

Q. What would cause that?

A. By different setting of the throttle.

Q. Assuming that that happened without any change in the throttle, what would cause the r.p.m.'s of the engine to change radically up and down?

A. Poor adjustment, poor parts or changes in load are the only things that I can think of at the

(Deposition of Sidney W. Newell.)

moment that might possibly cause a variation of that nature without changing the throttle. Actually I have never seen a phenomena of that type occur or have I ever heard of it occurring.

Q. Couldn't it occur if something was wrong with the [797] governor which controls, as I understand it, the fuel intake into the cylinders?

A. Well, I am afraid that your understanding of the governor is incorrect, in that the governor is only an over speed governor and not a speed regulating governor. The purpose of the governor is to protect the engine in the event that a propeller becomes lost or a shaft becomes broken rather than as a constantly operating speed regulating governor.

Q. How long does it take to time an engine such as the one on the Urania, how long does it take to effect the retiming of an engine of this type?

A. To set, or what we classify as retiming an engine, a man with one or at the most two helpers, can do a job in comparatively few hours depending upon how badly it is out of time and other similar factors. It might take one or two hours or it might take six or eight hours, in that general magnitude of time.

Q. Would three days be an excessive amount of time?

A. To retime an engine?

Q. Yes.

A. If we understand the same thing by retiming an engine, three days would be excessive.

Q. If upon completing the timing or retiming of

(Deposition of Sidney W. Newell.)

an engine it is run full ahead with the result that the pistons hit [798] the valves, what does that indicate?

A. It indicates that something is wrong in the timing to some extent. The amount may be quite large or quite small.

Q. How could a piston hit a valve in this type of engine?

A. If an engine is timed with improper clearance in the rocker arm adjusting screws, or in any other way, it is improperly timed, the comparatively small clearances between the valves and the pistons can be reduced to such a point that there is no clearance there.

Q. That is a bad condition, isn't it, when the pistons hit the valves?

A. Oh, yes, it is a very poor condition, very poor.

Q. Could that cause damage to your timing gears?

A. If the engine can run without breaking rocker arms; we have never found that it has damaged the timing gears, but again, anything can be true.

Q. There might be a thrust back that might do damage to those gears?

A. That is possible, but as I pointed out, we have a weak link there in that whole train to take care of such matters, namely, a cast iron rocker arm so that if the valve and the piston merely touched

(Deposition of Sidney W. Newell.)

each other so that the load which would be imposed back through the entire mechanism finally to the gears would be quite small and then no damage would be done to the gears. It is an occurrence that transpires [799] quite frequently.

Q. What do you mean, pistons hitting valves?

A. Yes, that is true.

Q. Why does it happen frequently?

A. As I just mentioned, if the rocker arm adjusting screw is too tight, any one of many, many variations that can occur, only a few thousands of an inch variation in the location of the keyway in a gear can upset the timing, a small amount. We have to work within practical limits and unfortunately sometimes you will get an accumulation of practical limits that run you outside of an acceptable tolerance and the acceptable tolerance is exceeded when the pistons hit.

Q. Isn't it good practice in timing an engine to turn it over by hand and make certain before you run it that that condition would not obtain?

A. Yes, that is done, but unfortunately a light hitting is not noticeable because the velocities are too low, you don't get any noise out of it when you are barring it over by hand. The force required to bar the engine over is such that if there is a slight hitting of the valves you don't notice it when that increased drag is imposed on the engine, so even if you turn the engine over by hand you can't always be sure that everything is completely in the clear.

(Deposition of Sidney W. Newell.)

Q. I will hand you Exhibit P-1 through P-13. Are there [800] any items you have furnished there that don't relate to the galling of the timing gears?

A. I believe that invoice identified as P-7 which covers 6 AV6 3221 high pressure fuel lines from manifold to valves in amount \$54.00 were not related to the galling of the gears. There are some other items that come to my attention that I can't be too certain as to whether or not they were necessary, for example, on invoice P-8, the item No. 4 is 1 V6-1950A fresh water gauge. I don't see off-hand where that had any direct relationship to the galled gears. Similarly, for item No. 5 1 V6-1950 salt water gauge, \$13.90.

Q. (By Mr. Howard): Each?

A. Each, yes. I am sure that there are other items that would be subject to further clarification as to just where they were used on the particular job. There are many of these parts that might or might not be required, but since I was not there during all the work or supervising all the work, I can't be sure.

Mr. Hokanson: This is off the record.

(Remarks off the record.)

Q. (By Mr. Hokanson): Did you find anything wrong with the liners or the pistons, if you examined them?

A. I didn't see anything wrong with the liners or pistons or bearings that I saw.

(Deposition of Sidney W. Newell.)

Q. Did you examine the air, water and oil tubing? [801] A. No, sir.

Q. Did you inspect the vertical shaft on the ship as it came to you?

A. Oh, yes, I saw the vertical shaft when I was there.

Q. Did you inspect it for bends? A. No.

Q. You don't know whether it was straight or not? A. No, sir.

Q. Let me ask you this question: Would there have been any other cause than contaminated lubricating oil which resulted in the galling of the timing gears, in your opinion?

A. To the best of my knowledge, there was nothing brought to my attention that could possibly have caused the galling of the timing gears on the engine in the *Urania* except contaminated lubricating oil.

Q. You base that opinion just on what you observed and what was told to you by others, is that correct?

A. One of the chief bases was my experience with engines of that specific type and related types over the years."

Mr. Hokanson: I move to strike the answer as not responsive.

Mr. Howard: Counsel is asking the question, in effect, what he based his opinion on.

Mr. Hokanson: I think the question calls for a

(Deposition of Sidney W. Newell.)

yes [802] or no answer.

The Court: The objection is overruled.

“Q. You mean at sea or as an engineer?

A. At sea or after they have been to sea and have come home.

Q. I am speaking now of your experience, Mr. Newell.

A. That is what I am speaking of, too.

Q. That is what I wanted to get, Mr. Newell.

A. In other words, I have been to sea with that same engine, I have seen troubles at sea, I have seen troubles in various yards, both caused by myself and caused by others.

Q. How long, under ordinary operating conditions, will these timing gears, both lower and upper, last without substantial wear before they need replacement?

A. The first Union diesel engine that was built was built in 1923 and to the best of my knowledge, that engine is stilling operating and still has her original gears in. As I recall, the first engine of the Model V-6, such as was in the *Urania*, was built in 1937, and I know that vessel operated through most of World War II and I am not sure whether it is still in existence or not, but at least to the best of my knowledge, up until the beginning of World War II, which was 1941, the original gears were still functioning satisfactorily in the engine.

Q. When was the ingine bulit for the *Urania*?

(Deposition of Sidney W. Newell.)

A. The engine was shipped by us immediately after it was built and tested on or about December 24, 1942.

Q. Could poor gear material result in wearing down more quickly than those on the vessels that you have mentioned? A. Oh, yes, yes.

Q. In such event could that contribute toward the galling of them?

A. Well, I can't differentiate between galling and wear. Galling is merely a type of wearing.

Q. Isn't it possible, Mr. Newell, that a loose part could fall down and get into those gears?

A. Yes, it could happen.

Q. In which case you might break a tooth or get the gears slightly out of line, resulting in galling?

A. Any part that I can envision that could possibly get in between the gears would of necessity be of sufficient magnitude as to prevent any further operation of the engine.

Q. Did you inspect the worn gears at any time?

A. Yes, I saw the gears after they were taken out, which they told me were the gears that they had taken off first in Manzanillo and then the next one they had taken off in Long Beach.

Q. Who told you? A. Mr. Cross.

Q. Did you examine them carefully? [804]

A. Yes, I examined them.

Q. What was the character of the galling?

A. A badly galled or scuffed and heavily worn

(Deposition of Sidney W. Newell.)

surface which had been extensive enough to carry itself through the case on the gear and into the relatively soft tough core. The gears were worn out.

Q. You mean the teeth were worn clear down?

A. The teeth were in some places, I would say, not more than one-half to at the most two-thirds of the thickness of the original tooth.

Q. And was that true of the upper gears as well?

A. I don't recall the upper gears quite as well. I can recall seeing one pair of upper gears that were scuffed badly. I don't recall having seen any of the upper gears that were worn to the same extent as the lower gears as I have mentioned before.

Mr. Hokanson: I have no further questions.

Redirect Examination

By Mr. Howard:

Q. How many samples of the oil did you take out of the base of the crankcase at Los Angeles?

A. Approximately a dozen.

Q. Now, this auxiliary pump that you testified about was hooked up to the lubricating oil cooler since 1943, you remember that was your recollection?

A. I didn't so testify to the best of my recollection. [805]

Q. What was your statement as to this auxiliary pump, Mr. Newell?

A. As I recall, I said that an auxiliary pump was connected to the piping which could lead to the coolers.

(Deposition of Sidney W. Newell.)

Q. Which could lead to the coolers?

A. That is correct.

Q. You don't know that it did lead to the coolers?

A. I don't know when it was connected with the coolers.

Q. Is it installed in such a manner that it could be turned on or turned off by a valve?

A. As I remember the installation, they had a blank flange which was constructed of one piece but of two parts. The oval shaped piece of plate was blanked in one end and provided with a hole in the other end so that the normal connection of the piping was interrupted where this blank flange was inserted, but if you wanted to clear that obstruction, the oval shaped member could be reversed and the end with the hole in it put at the junction of the shipboard piping and the engine piping thus permitting water from the pump to be discharged into the cooler piping.

Q. As I understand it then, by reversing this flange, the water through the pump would either go into the cooler piping or might be directed in some other direction?

A. That is the best of my recollection of the arrangement, yes, sir. [806]

Q. Now, Mr. Newell, you testified regarding the practice of cleaning the lubricating oil cooler and that it required periodic cleaning. When that is

(Deposition of Sidney W. Newell.)

done, can it be done aboard ship or must it be removed from a ship?

A. On this type of cooler, shipboard cleaning is certainly impractical if not impossible. We normally consider that it is impossible aboard a ship, though anything that can be rigged up ashore can be rigged up aboard a ship.

Q. After how many hours of operation would you say the cooler should be cleaned?

A. Oh, many thousands of hours.

Q. I notice by reference to Exhibit P-6, it is indicated that a number of filter elements were supplied to the vessel. Was that 12?

A. I believe that is correct.

Q. Assuming that the Chief Engineer or the Service Engineer who was aboard the vessel had encountered contamination in the lubricating oil, isn't it likely that an excessive number of filter elements might have been used by frequent replacement?

A. As I recall, there are 12 individual elements fitted into one lubricating oil filter. It is generally considered good practice to replace all of the elements if you are going to replace any of them.

Q. The 12 elements would constitute one normal replacement [807] in the filter?

A. I believe that is correct.

Q. Now, when the *Urania* left Manzanillo with Service Engineer Cross aboard, you knew that she

(Deposition of Sidney W. Newell.)

was to return to Los Angeles? A. Yes, sir.

Q. Did you know that she was to return to Los Angeles for further repairs? A. Yes, sir.

Q. As I understand your previous testimony, if a loose part had fallen into the timing gears, it would have caused an immediate stoppage of the engine?

A. That would be my opinion, yes, sir.

Mr. Howard: That is all the questions I have.

Recross-Examination

By Mr. Hokanson:

Q. It is a very simple matter to clean a cooler, isn't it?

A. Not that type of cooler, no, sir.

Q. Well, it is cleaned on both the oil and salt water sides, isn't it? A. Yes, it is.

Q. It is normal practice, I believe, in cleaning them, to flush out your salt water side first by using a chemical, is that correct?

A. Yes, sir.

Q. And then you flush it out with water?

A. Yes, sir.

Q. And you blow it out with air?

A. Yes, sir. [808]

Q. You can look through them and see whether they are clean, can't you? A. No, sir.

Q. You can't? A. No, sir.

Q. Can you on the salt water side?

A. I believe not, sir.

Q. Can you on the lubricating oil side?

(Deposition of Sidney W. Newell.)

A. I believe not.

Q. Have you ever cleaned one?

A. I have never tried to clean a cooler of our type in our shop. We won't touch them.

Q. Why not?

A. Because the manufacturer recommends a very extensive process to be followed in cleaning heat exchangers of that particular type.

Q. You mean to say then that the procedure for cleaning this type of cooler could not be done except by the factory that manufactures them?

A. No, sir.

Q. Are there instructions as to the cleaning on the plates?

A. Not to the best of my recollection.

Q. What is there unique about this type of cooler that requires a special process?

A. The passages within the coolers are very small, quite tortuous, and you can't clean out all of the interior portions by any method which to most of us appears normal and more or less routine with ordinary maintenance or [809] ordinary mechanical equipment. It would seem obvious and straightforward to one who is acquainted with that type of equipment, but this type of equipment is really designed and built for submarines rather than for commercial tankers.

Q. You did remove the flange on the salt water side and look in and see those chambers, didn't you?

A. You can only see the ends of them.

(Deposition of Sidney W. Newell.)

Q. Well, you need a cooler, don't you, for the purpose of keeping your lubricating oil within temperature limits?

A. It all depends on what limit you set up. Obviously we thought that a lubricating oil cooler was desirable on this type of engine. It is normal practice with most engine builders to supply lubricating oil coolers, but on engines such as the Union diesel engine in the *Urania*, a lubricating oil cooler is not essential for operation, particularly at reduced speeds and for comparatively limited periods of time.

Q. Did Mr. Cross remove the cooler?

A. I don't know who removed the cooler when it was finally removed.

Q. Where was it removed, do you know?

A. To the best of my knowledge, it was removed at Craig Shipyard in Long Beach.

Q. You mean to say then that with this type of cooler at sea, assuming that you are in warm southern waters where your temperature runs as high as 70 and 80 degrees, that if [810] it became known to the engineer that the cooler was dirty or leaking or plugged, he would have no way aboard ship of effectively cleaning the cooler and proper procedure would be to remove it?

A. Yes, put it out of operation. You are assuming that he knew the cooler was in need of being taken out of operation.

(Deposition of Sidney W. Newell.)

Q. Is that part of your answer to the last question?
A. Yes, sir.

Q. Under the system of oil cooling on the Urania, could the lubricating oil cooler be by-passed so as to run oil directly from the lubricating oil day tank and the sump, and the rest through the engine?

A. I know of no way that the oil could be directly by-passed from the lubricating oil day tank to the sump of the engine. It can be indirectly by-passed to it through leakage in valves, pump elements, by the bearings, and other places that would have too much oil.

Q. Can you by-pass the cooler and still get lubricating oil through the system?

A. Yes, there is a lubricating oil by-pass valve.
Mr. Hokanson: That is all.

Mr. Howard: No further questions.”

Mr. Howard: That concludes the deposition of Mr. [811] Newell, if the Court please.

The Court: Do you offer that deposition in evidence?

Mr. Howard: I offer that deposition, Your Honor.

The Court: As a part of the cross libelant's case in chief?

Mr. Howard: Yes, Your Honor.

The Court: It is so received.

Mr. Hokanson: Your Honor, Mr. Howard made

an offer of the invoices, and I asked that the Court reserve its ruling on the admissibility of those documents until the conclusion of the reading of that deposition.

I object to the introduction of the invoices at this time; in addition to the grounds otherwise heretofore stated, on the specific ground that the witness who identified them has stated on cross-examination that it was not within his knowledge as to how many parts listed thereon were necessary in connection with the breakdown encountered at sea.

Mr. Howard: May it please the Court, I intend to next take up the deposition of Mr. N. A. Cross, the service man, and in this next deposition there will be additional testimony of this witness referring to the same invoices that perhaps will cast some further light on it.

The Court: The Court will reserve decision on this [812] point.

Mr. Howard: I will offer Identification A-19. That is the large diagram.

Mr. Hokanson: No objection other than the general objection already lodged.

The Court: It is admitted.

(Respondent's Exhibit A-19 received in evidence.)

The Court: It is in larger detail the same information shown in Figures A and B in Respondent's Exhibit A-16?

Mr. Howard: It is a cutaway of the photographs in A-16.

This is the deposition of Mr. N. A. Cross, starting on page 3.

DEPOSITION OF N. A. CROSS

“Direct Examination

By Mr. Howard:

Q. Would you state your full name and address, please?

A. N. A. Cross, 4023 Marion Court, Alameda, California.

Q. By whom are you employed?

A. The Union Diesel Engine Company.

Q. How long have you been employed by that company? A. Since January, 1941. [813]

Q. In what capacity are you serving at the present time? A. Assembly foreman.

Q. And what is your principal place of employment? A. 2200 East Seventh Street.

Q. Oakland? A. Oakland, California.

Q. Mr. Cross, do you expect to be in the State of Washington on or about April 6th or 7th, 1949?

A. No, I do not.

Q. Where are you working at the present time?

A. I have been in the shop this last week, but I am leaving tomorrow for New Orleans.

Q. Will you state briefly what your duties are as assembly foreman?

A. I supervise the assembly of the engines, the sub-assemblies of all parts that go into the engines,

(Deposition of N. A. Cross.)

the testing of the engines, supplies, all repair work that comes into our work dock and I go out on service work.

Q. How long have you been an assembly foreman? A. Going on three years.

Q. Prior to that time what was your position with the company?

A. I was in charge of the tools, the making of tools, maintenance of shop machinery.

Q. What education have you had, sir?

A. High school.

Q. Have you ever gone to sea?

A. No, I have not. [814]

Q. How long have you been working on Diesel engines? A. Since 1941.

Q. Do you hold any license as an engineer?

A. No, I do not.

Q. Do you on occasions act as a service engineer for The Union Diesel Engine Company?

A. Yes.

Q. And what does that work involve?

A. It involves a lot of things, maintenance of engines, supervision of installation of parts, tuning an engine.

Q. In October of 1948, did you perform some services for the motor tanker Urania?

A. I did.

Q. Do you have with you a record of any notes concerning the services that you rendered to the vessel at that time?

(Deposition of N. A. Cross.)

A. No, just my own personal notes.

Q. Your own notes? A. That is all.

Q. And those are contained in a notebook that you have with you? A. Yes, sir.

Q. Does that record show the dates on which the services were rendered? A. Yes, it does.

Q. Can you state for us the first date on which you commenced to perform work in the service of the motor tanker *Urania* in 1948?

A. October 28th, 1948.

Q. What did you do on that date? [815]

A. Caught a plane at 7:30 p.m. for Los Angeles.

Q. From Oakland?

A. From Oakland, California.

Q. And will you just go on from there please and tell us where you went and what you did?

A. I arrived in Manzanillo at 7:30 p.m. October 30th.

Q. How did you travel, please?

A. By plane and by train both. I started work, I made an inspection October 30th, that evening, a very hasty inspection and started work Sunday morning October 31st.

Q. That was aboard the tanker *Urania*?

A. Yes.

Q. Where was it located at that time?

A. It was out in Manzanillo Bay approximately a mile from shore.

Q. Will you state what you found the condition of the main engine to be upon your first inspection on October 30th?

(Deposition of N. A. Cross.)

A. Well, it was partially dismantled. The lower vertical shaft gears were out, the vertical shaft itself was out. The engine was all cleaned up, the intermediate gear bracket disassembled, the gears were in very bad shape, that is, the lower vertical shaft gears.

Q. Did you see the gears that were out of the engine? A. Yes, I did.

Q. Where were they then please?

A. Lying on the deck. [816]

Q. Will you state what you found the condition of those vertical shaft gears to be when you first inspected them? A. Very bad.

Q. Can you amplify what the nature of that bad condition was?

A. Well, they were badly worn, scuffed, galled.

Q. Now, are you referring to the upper or lower vertical shaft gears?

A. The lower vertical shaft gears.

Q. Did you also examine the upper vertical shaft gears?

A. I did. They were in fairly good condition. They showed very little signs of wear.

Q. By the way, when you left Oakland to go to Manzanillo, did you take any tools or parts with you?

A. Yes, I took a set of lower vertical shaft gears.

Q. On whose instructions?

A. My company's instructions, I took some fit-

(Deposition of N. A. Cross.)

tings. I believe I had some gaskets with me. I had a vertical shaft bushing. That is all that I can recall.

Q. Did you make any further inspection of the engine other than what you have already mentioned on your first inspection?

A. Not on the first inspection, no.

Q. Later did you make a further inspection of the engine to determine its condition?

A. Yes, I took the vertical shaft ashore. I chucked it in the lathe, took the vertical shaft ashore, chucked it in a [817] lathe, checked the run-out of it to see if it was true or bent.

Q. What did you find as to the condition of the vertical shaft?

A. The vertical shaft was out of true one-eighth of an inch.

Q. And can you describe where that condition existed on the shaft, the location on the shaft in relation to the vertical shaft bearing?

A. It was right at the stepdown of the shaft where it fits into that lower vertical shaft bearing.

Q. That is the location of the bend?

A. Of the bend.

Q. And was that condition corrected?

A. Yes.

Q. How, please? A. By straightening it.

Q. Was that done ashore in the shops at Manzanillo?

(Deposition of N. A. Cross.)

A. Yes, it was done in the Naval shipyard at Manzanillo.

Q. What did you do with the vertical shaft after that?

A. Took it back aboard the ship and proceeded with my other work.

Q. And that shaft was reinstalled in the engine?

A. Yes, that shaft was put back in the engine.

Q. Now, what additional work did you do about the engine?

A. May I have that question again please?

Q. What additional work did you do about the engine?

A. You mean in all respects, repair work?

Q. Yes. [818]

A. Well, I checked the alignment of the gears when I installed them.

Q. Which gears please?

A. Both the upper and the lower.

Q. What did you find as to the condition of the alignment?

A. Very good. I checked the fuel controls. They were pretty badly set. I had to reset all the fuel controls.

Q. Will you go ahead please?

A. Installed a new oil line to the lower vertical shaft gears.

Q. Did you install new vertical shaft gears, new timing gears?

A. New lower vertical shaft gears, yes.

(Deposition of N. A. Cross.)

Q. You may refer to your notes please in answering this question, how long did it take you to complete this work that you have described?

A. Three and a half days approximately.

Q. Was additional work done on the vessel, on the maintenance of the engine by you?

A. What do you mean by additional work?

Q. I just want to be sure that you have testified for the record as to all of the work that you performed on the main engine?

A. Yes, that was done by me. There may be some items I missed, small items that I don't recall right now. [819]

Q. Were any additional parts required other than what you brought with you from Oakland to complete the repairs at Manzanillo?

A. No, that is all I used there.

Q. After these repairs had been completed, will you tell us what if anything was done then by you in connection with the operation of the engine?

A. How do you mean that, when they were done?

Q. Did you participate in any dock or sea trials?

A. Yes, there was a sea trial there on the Bay of very short duration.

Q. Did you time the engine? A. Yes.

Q. How long did it take to time the engine?

A. What do you mean by timing?

Q. Can you describe what you did in connection with the timing of the engine?

A. Timing is a very broad term. We of The

(Deposition of N. A. Cross.)

Union Diesel refer to it as timing, we set the fuel, that is the timing of an engine. You can also time the camshaft and the timing gears. It runs into considerable explanation there.

Q. Did you actually go through that operation while you were down there at Manzanillo?

A. Yes, I did.

Q. How long did that take?

A. Which timing?

Q. The timing that you have just described to us, Mr. Cross.

A. The whole timing? [820]

Q. The adjusting?

A. That was the whole job practically, just about all of it. It was all timing and setting the controls. It all works into one another.

Q. By reference to your notes, can you tell us how long a time was involved in this operation?

A. Two and a half days.

Q. Is that in addition to the three and a half days you testified to previously to effect the repairs?

A. No. I was figuring nothing off one day for the inspection of the vertical shaft and alignment of the gears.

Q. That would be the first day?

A. That would be the first day.

Q. And after that there were two and a half days required to install the gears and complete the adjustments and timing that you have testified to?

A. Approximately, yes.

(Deposition of N. A. Cross.)

Q. And after that how long did the dock and sea trials take?

A. I don't recall exactly. It was a matter of just about a couple of hours.

Q. What did you find the condition of the main engine to be after the dock or sea trials?

A. Well, on the first sea trial I had some valves hitting the pistons and I had to rechange the timing on the upper vertical shaft gears. [821]

Q. How long did that take, Mr. Cross?

A. It is rather a guess, I would say two or three hours.

Q. Then did you have a further trial on the engine?

A. I believe used as a trial just going out of the harbor, as a sea trial there.

Q. How did the engine perform at that time?

A. Very satisfactorily.

Q. Do you recall at what speed in r.p.m.'s the engine was operated during the first trial?

A. Well, I brought it up gradually. I wouldn't say for sure, but I am sure that I brought it up to 325 revolutions per minute.

Q. By the way, what is the normal r.p.m. full speed on that engine?

A. 325 r.p.m.

Q. Did you notice the condition of the lubricating oil in the main engine of the *Urania* on your first inspection on arrival?

A. There was no lubricating oil in the engine.

(Deposition of N. A. Cross.)

The engine had been cleaned out. The day tanks had been emptied.

Q. Was new oil put in after the gears had been replaced? A. Yes, it was.

Q. Do you know what type of oil was put in?

A. No, I couldn't say.

Q. Were any filters changed?

A. It would be only hearsay on my part. I was informed [822] they were. I didn't actually do it myself.

Q. No filters were changed while you were there at Manzanillo? A. No, not while I was there.

Q. Who actually performed this work of changing the gears and checking the alignment of the shaft? A. I did myself.

Q. Did you have any assistance on that from any source?

A. Yes, the engineer and his men helped.

Q. Did you obtain any assistance from mechanics or machinists ashore?

A. No, only that I used the Naval shipyards shop.

Q. Do you recall whether any shore mechanics or machinists came out to the vessel to assist in the repairs?

A. I was told that they did, but not while I was there, no one else.

Q. Will you describe for us briefly what ship repair facilities are available at Manzanillo, Mexico, as you know?

A. Practically none. The Naval shipyard has a

(Deposition of N. A. Cross.)

machine shop there with antique machinery. It was very hard to get anything done at all there.

Q. While you were at Manzanillo, did you check the condition of the lubricating oil cooler or heat exchanger? A. No, I did not.

Q. Why not? [823]

A. Well, I was sent down just to put the gears in. I didn't at that time have any reason to take it off to check it. The engine was clean when I got there. I had no way of knowing that there was water in the oil. I saw no reason to do it.

Mr. Hokanson: I move to strike the last part of the answer on the ground it is not responsive, that part of his answer which state that I had no way of knowing there was water in the oil, and on the further ground it is an assumption on the part of the witness."

Mr. Howard: If the Court please, it seems to me the question is asked, "Why not"? and the witness has endeavored to answer why not, giving his reasons. It is responsive to the question.

The Court: The objection is overruled.

"Q. (By Mr. Howard): Did you have any knowledge of there having been any water in the lubricating oil system? A. None at all.

Q. Did you have any information as to when

(Deposition of N. A. Cross.)

the lubricating oil cooler had last been cleaned or tested?

A. I was told that it was just previous to leaving, I [824] believe, it was Seattle."

Mr. Hokanson: I move to strike that on the ground that it is hearsay.

The Court: The answer is within the scope of the question. The objection is overruled.

"Q. Who told you that, Mr. Cross?

A. In a round about way, the engineer."

Mr. Hokanson: I renew my objection. I will waive the objection, Your Honor.

"Q. (By Mr. Howard): You have stated that a new oil line was installed on the lower vertical shaft gears. Will you explain what your reason for doing that was please?

A. Well, it is a common practice in the shop on this model engine when we would work on that engine to install a new oil line. It is larger. We found that our lubricating oil pumps were sufficiently large to take a larger oil line. It can't be as readily plugged. [825]

Q. As delivered from the factory, how many oil lines serve the lower vertical shaft gears?

(Deposition of N. A. Cross.)

A. Just one.

Q. Was there any evidence that that line as inspected by you or as found by you in Manzanillo was clogged?

A. Can we go off the record for a minute?

Mr. Hokanson: I think your answer should be on the record if you have one to give.

A. I want to ask a question.

Mr. Hokanson: I think he should answer the question if he is able to do so.

Q. (By Mr. Howard): Can you answer the question, Mr. Cross?

A. May I have the question again please?

(Question read by reporter.)

A. No, none at all.

Q. Did you check it?

A. Yes, it had been cleaned though.

Q. State whether or not you found any additional pumps connected with the lubricating oil system and heat exchangers when you arrived aboard the vessel in Manzanillo?

A. May I have that question again please?

(Question read by reporter.)

A. No.

Q. (By Mr. Howard) (Continuing) Connected with the line leading to the lubricating oil cooler?

A. There was only the one pump.

Mr. Hokanson: Before he answers will you read the question as Mr. Howard has rephrased it?

(Question read by reporter.)

(Deposition of N. A. Cross.)

A. The question is not quite clear.

Q. (By Mr. Howard): Did you find a standby fire pump hooked into the lubricating oil system?

A. There is one connected to it, but I was not looking for it.

Q. Do you know?

A. That is a shipboard installation. It hasn't anything to do with the engine.

Q. Do you know whether or not that pump was being used in connection with the circulation of lubricating oil? A. Apparently not.

Q. After these repairs that you have mentioned were completed at Manzanillo, did you remain aboard the vessel? A. Yes, I did.

Q. When it went out to sea?

A. Yes, I did.

Q. What was the destination of the vessel then?

A. Los Angeles.

Q. And at that time will you state if you know whether or not any standby pump was used in connection with the circulation of lubricating oil?

A. Yes, at a later date it was. [827]

Q. When?

A. On the night of Thursday, November 4th.

Q. Were you present when that was hooked into the system? A. No, I was not.

Q. Do you know the reason for it being hooked into the system?

A. Yes, the engine was running hot.

Q. Was that condition apparent to you?

(Deposition of N. A. Cross.)

A. Yes, it was.

Q. For how long had that condition existed?

A. I couldn't say, a very short time.

Q. Was it a matter of hours?

A. Yes, it was a matter of a few hours.

Q. Had you consulted with the chief engineer about the use of this standby fire pump?

A. No, I hadn't, not to my knowledge right now.

Q. Did you make any recommendation to the chief engineer with respect to the use of the pump?

A. I can't recall.

Q. You did know that it was hooked up?

A. Yes, I did.

Q. Did you make any recommendation against its being used?

A. I think I did but I am not sure of that. We had to cool the engine some way. I don't recall whether I objected to it or not.

Q. Mr. Cross, do you have a record or a recollection of [828] the pressures being maintained on the lubricating oil system and the salt water running through the lubricating oil cooler?

A. No, only that the oil would be between 20 and 25 pounds pressure and that the salt water wouldn't have been too high or I would have done something about it.

Q. Did you check the gauges during the operation of the engine?

A. Oh, no, I glanced at them. I don't write them down. If anything goes too far out of line I

(Deposition of N. A. Cross.)

adjust it, otherwise it's like you are driving your automobile, I let it go.

Q. Did you find any condition indicated by the gauges which would necessitate any adjustment in the pressure of either the lubricating oil or the salt water?
A. No, I did not.

Q. In other words, the conditions were normal?

A. They might not have been normal but they were within a safe operating range.

Q. Did you see the entries made by the chief engineer in the log of the vessel as to the pressures maintained on the lubricating oil and the salt water circulating system?
A. No, I didn't.

Q. Do you know of your own knowledge what those pressures were?

A. May I have the last few questions again?

(Questions and answers read by reporter.)

A. No, only that they were within a safe operating range. [829]

Q. You have stated that after your first trial you found that the valves were hitting the pistons and you changed the timing of the upper vertical shaft gears. How did the engine operate after that?

A. Very satisfactorily.

Q. Now, Mr. Cross, did you see what disposition was made of the gears that were replaced in the main engine of the *Urania* at Manzanillo? Do you know what disposition was made of those gears?

A. No, I don't.

Q. Do you know what the sea water temperature

(Deposition of N. A. Cross.)

was in and around Manzanillo?

A. Approximately 85 degrees sea water temperature.

Q. What effect would that have on the efficiency of the lubricating oil cooling system?

Mr. Hokanson: If he knows.

Mr. Howard: Q. If you know?

A. Are you assuming new coolers or old coolers?

Q. As you found the system at Manzanillo?

A. I had no way of knowing what the condition of them was at Manzanillo.

Q. Under normal conditions what effect would that have? A. It should have no effect.

Q. Assuming that the lubricating oil cooler had been recently cleaned and tested and put into good working condition, then would the temperature of sea water of 85 degrees [830] have any bearing on the efficiency of the cooling system?

A. May I have that question again, please?

(Question read by reporter.)

A. It would work better than it would if they were dirty.

Q. Would the temperature of the sea water have any bearing on the efficiency of the system?

A. No.

Q. Mr. Cross, in your opinion and based on your experience with these engines and with the actual examination that you made of the engine on your arrival in Manzanillo and the check that you made of the vertical shaft in the lathe ashore, would you

(Deposition of N. A. Cross.)

state whether you feel that the slight bend that you found in the vertical shaft would have had any effect on the meshing of the gears or the galling of the gears that you found?

A. No, I believe it was done when they took it out. When you get it back in place it would be straight, but in taking it out it is quite a job in an engine room. It is very easy to bend and the condition I found it, laying on the deck is why I wanted a check. It was laying under a support and had a bend in it. It was a very permanent bend. In the manner that it was setting it had a bend in it and it could have readily taken a set."

Mr. Hokanson: I move that the answer be stricken [831] as not responsive, since the witness speculates upon the time when the bend was put in this shaft and he does not respond to the question, which assumes that the shaft was in the engine when the bend was in it.

Mr. Howard: I submit, Your Honor, that the witness is stating a fact here and expresses an opinion.

The Court: It seems to me it is not a discussion that is directly suggested by the question. The answer is "No". The rest of it will be stricken. The "No" part of the answer will stand.

(Deposition of N. A. Cross.)

“Q. Mr. Cross, if that bend in the vertical shaft had existed before it was removed from the engine, in your opinion and from your experience and from your inspection of the engine and the gears, would you say that the bend would have had a bearing on the galling of the gears?

A. It couldn't have had the bend in the engine while it was running. It was in such a position that it was right at the bearing.”

Mr. Hokanson: Again, Your Honor, the answer is not responsive.

Mr. Howard: The witness has been asked to express [832] an opinion.

The Court: The objection is overruled.

“Q. In other words it would have been impossible to run the engine with that bend in it?

A. The shaft couldn't have been in place with the bend in it.

Q. You have stated, Mr. Cross, that on the evening of November 4th it came to your attention that the engine was running hot. What if anything did you do then in connection with the further operation of the main engine of the tanker *Urania*?

A. I checked the pyrometer readings. They were satisfactory.

Q. What would those show?

A. They would show whether the firing tempera-

(Deposition of N. A. Cross.)

ture was too high.

Q. And you found them satisfactory?

A. They were found satisfactory.

Q. Did you do anything else, Mr. Cross?

A. No, I don't recall anything else I did at that time.

Q. Did the engine continue to run hot after that?

A. You mean after my inspection?

Q. After you had checked the pyrometer readings. A. Yes. [833]

Q. Will you state what transpired after that with respect to the further operation of the main engine of the tanker?

A. They couldn't keep the engine cool. The chief engineer had to put more water through the system to cool the engine.

Q. How is that done please?

A. By means of a fire pump.

Q. And will you describe how that fire pump was used, what did they do?

A. I don't follow your question there.

Q. You say that they put more water into the system by means of a fire pump. How was the fire pump employed, how was it hooked into the system?

A. It was piped right into the system there and just turned on, open the valve, that was it.

Q. Whereabouts was it hooked into the system please?

A. That I couldn't say. All I know it was on

(Deposition of N. A. Cross.)

the salt water side. I couldn't say anything more than that.

Q. Would you say that the use of that fire pump increased the pressures running through the system beyond safe operating pressures? A. No."

Mr. Hokanson: I move that that be stricken as involving the opinion of the witness, who has not been qualified to establish proper operating pressure of a [834] cooler, which is not an integral part of the engine with which this witness was concerned.

Mr. Howard: The witness has testified he was assembly foreman at the factory and had been for a number of years, if the Court please.

Mr. Hokanson: The witness is testifying with respect to a cooler or heat exchanger which it has already been established was furnished by another manufacturer and was placed on this engine and is not an integral part of the engine as put out by The Union Diesel Engine Company. I submit he is not competent to testify to what safe operating pressures are on an instrument with which his company is not concerned.

Mr. Howard: In response to that, if the Court please, the witness testified in establishing his qualifications he had supervised the assembly of the engine, the sub-assembly of all parts that go into the engine, testing of engine supplies, and all repair work that comes with it. I think on that and other

(Deposition of N. A. Cross.)

statements he has made establishing his qualifications he is eminently qualified to render an opinion on such a matter as this question involves.

Mr. Hokanson: One further objection, Your Honor. The question does not state the amount of pressure that this pump would deliver, and it is not established that [835] that was within the witness' knowledge. He is therefore incompetent to answer the question as stated.

The Court: I believe there is some bearing on that point later on, and I overrule—

Mr. Hokanson: Before proceeding, my objection also went to the form of the question, Your Honor. At that point you will notice I objected to the form of the question as leading. May I have Your Honor's ruling on that objection?

The Court: The objection is overruled.

“Q. (By Mr. Howard): What is the normal safe operating pressure through the system of this circulating water?

Q. (By Mr. Hokanson): If you know?

A. May I have the question again?

(Question read by reporter.)

A. It is safe to run your water pressure up to a hundred pounds.

Q. (By Mr. Howard): What pressure would be obtained through the system with the use of this fire pump that you referred to?

(Deposition of N. A. Cross.)

A. That I couldn't say. It is adjustable. [836]

Q. Would it be above 100 pounds?

A. I couldn't say that.

Mr. Hokanson: He has already stated that he doesn't know.

Mr. Howard: You can go ahead and answer that anyway.

A. I couldn't say. I had nothing to do with the making of the fire pump or operating it.

Q. In your opinion, did the use of the fire pump increase the circulation of water through the lubricating oil cooling system, increase the pressures beyond a safe operating level?

Mr. Hokanson: I object to the form of the question as leading.

Q. (By Mr. Howard): You may answer it.

A. What is the question?

(Question read by reporter.)

Mr. Hokanson: My objection should also include the objection that the witness has already answered that he doesn't know what pressure was applied and therefore is not competent to answer the question."

Mr. Hokanson: The same objection, Your Honor, in addition to the one registered as leading, the form of the question. [837]

The Court: The objection is overruled.

(Deposition of N. A. Cross.)

“Q. (By Mr. Howard): Now will you answer the question please?

A. It is the same. I didn't know what it was.

Q. From your experience with the operation of these Union Diesel engines, what step would you take to correct the condition that you found that you have referred to as the engine running hot on November 4th? [837-A]

A. Will you read that question again?

(Question read by reporter.)

A. You are assuming that it is in port or out at sea or where?

Q. At sea.

A. Try and get the water to flow through the system or slow the engine down.

Q. At what speed was the engine being operated on the evening of November 4th when it was running hot?

A. I don't recall exactly. It was between 300 and 325 r.p.m.

Q. Was it continued at the same speed after that? A. Yes, it was.

Q. For how long?

A. Until the gears began knocking.

Q. When did that occur, Mr. Cross?

A. I received a call at approximately four a.m. Friday, November 5th. It had happened prior to that.

Q. The engine being operated when you responded to that call? A. Yes, it was.

(Deposition of N. A. Cross.)

Q. At what speed?

A. I don't know for sure. I believe it was 325.

Q. And what action did you take when you responded to this call on four a.m. on November 5th?

A. I slowed the engine down immediately.

Q. To what speed? A. A slow speed.

Q. About how many revolutions would that be?

Q. (By Mr. Hokanson): If you remember?

A. Between 75 and a hundred r.p.m.

Q. (By Mr. Howard): And did you do anything else at that time?

A. In regards to the engine?

Q. With regard to the engine.

A. Just checked the governor, that is all.

Q. And what did you find on your check of the governor?

A. The governor was jumping up and down. That is an indication that your gears are going bad.

Mr. Hokanson: I object to the last part of his answer on the ground it is not responsive."

Mr. Hokanson: I move to strike the last part of his answer as not responsive.

Mr. Howard: I agree to that.

The Court: It is stricken.

Q. "By Mr. Howard): What does the jumping up and down of the governor indicate?

A. That the gears are going bad. That is one indication of it. [839]

(Deposition of N. A. Cross.)

Q. By the way, had you checked the operation of the gears after departure from Manzanillo?

A. Yes.

Q. What had you found as to the functioning of those gears? A. Very satisfactory.

Q. How often had you checked the gears?

A. At least once an hour while I was awake.

Q. At what speed had the engine been operating after your departure from Manzanillo?

A. 300 to 325 revolutions per minute.

Q. That would have been for a period of how long please? A. Approximately 36 hours.

Q. Well now Mr. Cross, can you go on from there to tell us what was done with respect to the operation of the main engine after you slowed it down to 75 to a hundred r.p.m.?

A. Well, I wanted to shut it down but it was dark out and the captain objected to a complete shut-down until daylight came. At approximately six thirty-five a.m. I shut the engine down, inspected the gears. The gears were very bad. The lubricating oil was a brownish color. I had the captain to ask the engineer to take a sample of the oil which they did. We flushed out the oil system, dumped all the oil overboard, took on new oil and we proceeded to run approximately one hour out of three approximately, just running the engine to keep headway, to keep our heading.

Q. At what speed were you running then? [840]

A. Very slow.

(Deposition of N. A. Cross.)

Q. The engine was running then?

A. Very slow.

Q. You continued to run the engine in that fashion until you arrived at Los Angeles, did you?

A. No, we did not. We were keeping headway until a tug met us.

Q. And can you state when that tug arrived?

A. She took us in tow approximately eight a.m. Saturday, November 6th.

Q. Did you change the lubricating oil at any other time before the arrival of the tug?

A. No, I did not.

Q. The oil had been changed at Manzanillo?

A. It had been changed at Manzanillo.

Q. And you flushed the oil out and changed the oil once after the engine had heated up?

A. Cleaned it and changed it after the gears had been put back.

Q. Did you remain aboard the vessel until it arrived at Los Angeles? A. I did.

Q. State whether you performed any services in connection with the further repair of the main engine of the tanker Urania after it arrived at Los Angeles? A. Yes.

Q. Describe what you did after arrival at Los Angeles?

A. We installed all new gears, that is, the upper and lower vertical shaft gears. We checked No. 7 and No. 8 main [841] bearings, inspected No. 6

(Deposition of N. A. Cross.)

connecting rod bearing, water tested the engine, installed a new governor crosshead.

Q. Why did you install a new governor crosshead?

A. It was worn. Do you wish me to go ahead and answer?

Q. Please.

A. Inspected the thrust bearings, checked the fuel injectors, cleaned all the lubricating oil system.

Q. What did you find on checking the thrust bearing? A. It was in very good condition.

Q. Will you go ahead now please?

A. Removed the three heat exchangers, sent them all out to be cleaned and checked.

Q. What did you find on checking the heat exchangers?

A. When I looked at them they had scale on them, all three of them.

Q. How much scale?

A. I couldn't say, that is a hard question to answer.

Q. Was it an abnormal amount?

A. There was more than should have been on them.

Mr. Hokanson: I object to the answer as not being responsive and being so vague as to be of no evidentiary value.

Q. (By Mr. Howard): I will ask you again, was there an abnormal quantity of scale on the heat

(Deposition of N. A. Cross.)

exchangers when you inspected them? [842]

Mr. Hokanson: I object again on the ground that the witness has not been qualified to state what an abnormal amount of scale is. The conditions have not been incorporated in the question which would make the answer of any evidentiary value.

Q. (By Mr. Howard): Now, Mr. Cross, during your period of employment with The Union Diesel Engine Company, had you had occasion before this particular incident to inspect and test heat exchangers?

A. Yes, inspect them and testing them on the engine, not a hydrostatic test.

Q. From that experience are you able to state whether the amount of scale that you found on the heat exchangers removed from the Urania was more than you normally found on such heat exchangers?"

Mr. Hokanson: May I make my objection at this point?

The Court: You may.

Mr. Hokanson: In the first place, he hasn't been qualified as an expert on heat exchangers. He hasn't stated in his answer what type of vessel the heat exchangers previously examined came from. He hasn't established how long those heat exchangers he had previously examined had been in operation. I submit [843] there is not incorporated in this

(Deposition of N. A. Cross.)

question sufficient basis for an answer by this witness that would be competent.

The Court: The objection is overruled.

“A. Yes, it was.

Q. (By Mr. Howard): Where was this scale found by you that you referred to, describe the location of it?

A. On the salt water side of the heat exchangers, located on the fins of the cooling unit.

Q. What effect would that have on the efficiency of the heat exchanger as a cooling unit?

Mr. Hokanson: If he knows.

Q. (By Mr. Howard): If you know?

A. It would make them less efficient.

Q. During this period of inspection of the Urania main engine at Los Angeles, did you check the alignment of the engine and thrust bearing?

A. I did.

Mr. Hokanson: The what?

Mr. Howard: Engine and thrust bearing.

A. I did.

Q. (By Mr. Howard): What condition did you find as to that check? [844]

A. The alignment was good.

Mr. Hokanson: I object to the answer as not being wholly responsive to the question which is in two parts.”

(Deposition of N. A. Cross.)

Mr. Hokanson: I will waive the objection.

“Q. (By Mr. Howard): Did you check the lubricating oil leads into the cylinders while the tanker *Urania* was at Los Angeles? A. Yes, I did.

Q. What if anything did you find with respect to such parts?

A. There were several loose. One of them, No. 2 on the port side was leaking.

Q. Can you locate for us just at what point the terminal or lead was loose?

A. May I show you in the instruction book?

Q. Yes, you can refer to Claimant's Exhibit O. You are referring now to figure B in Claimant's Exhibit O? A. I am.

Q. And you are pointing to what?

A. Cylinder oil terminal.

Q. A cylinder oil terminal?

A. That is the one that was leaking (indicating). It was loose on its threads and the gasket was bad.

Q. Was that condition observable from inspection of the outside of the engine?

A. No, it was not.

Q. How did you determine it?

A. I did a hydrostatic test on the engine with the crankcase door removed for several hours and saw the leak of water into the inside of the engine.

Q. Do I understand you to mean that the leak then was of water down the cylinder?

A. That is correct.

(Deposition of N. A. Cross.)

Q. Did you find any other leaks of leads into the cylinders? A. Not leaking, no.

Q. Did you find any other leads loose?

A. Yes, I did.

Q. State where those loose leads were found.

A. I can't recall right now which ones there were?

Q. Could you recall how many there were?

A. Only approximately, three or four.

Q. What if anything was done to correct that condition?

A. No. 2, we put in a new gasket and tightened it and the others that were loose just tightened them.

Q. Will you describe for us the condition of that gasket you say was inspected at No. 2 cylinder?

A. It was galled a little, water had been leaking past it.

Q. What was done with respect to the scale on the heat exchangers that was found at Los Angeles or Long Beach?

Mr. Hokanson: If he knows. [846]

A. I sent the heat exchangers out to an agency that specializes in cleaning heat exchangers of that type and had them cleaned and checked.

Q. Were they returned to the vessel then?

A. They were returned to the vessel.

Q. Did you reinstall them?

A. I or one of my men did.

Q. How did the heat exchangers function after they were returned to the vessel?

A. Very well.

(Deposition of N. A. Cross.)

Q. What parts of the main engine were repaired or replaced at Los Angeles or Long Beach?

A. Well, there was new packings of the fuel injectors, new fuel pump discharge valves, one new set of lower vertical shaft gears, one set of upper vertical shaft gears, one governor crosshead assembly, new filter elements, new control station throttle disc. May I ask Mr. Newell a question please, I just want to try and clarify that disc.

Q. I think not, Mr. Cross.

A. May I have the instruction book? Friction disc is the real name of it.

Q. Anything else, Mr. Cross?

A. Various gaskets that had to do with re-assembling the engine. That is all I can recall at the present time.

Q. Now, you mentioned the governor crosshead assembly. Why would it be necessary to replace that unit? [847]

A. The bushings were worn in it. It seemed advisable to renew it.

Q. Would the wearing of the bushings in the governor crosshead assembly be related at all to the galling of the gears in the vertical shaft?

A. Possibly. I couldn't say for sure.

Q. Now handing you what has been marked for Identification as Claimant's Exhibits P-1 to P-13, will you examine those papers briefly. Can you state, Mr. Cross, whether Claimant's Exhibits P-1 to P-13 represent in part at least the parts and services

(Deposition of N. A. Cross.)

furnished to the tanker Urania at Manzanillo and Long Beach? A. Yes, they do.

Q. Having examined Exhibits P-1 through P-13, can you state whether all of the parts that are enumerated therein were necessary to effect the repairs necessary to the main engine of the tanker Urania?

Mr. Hokanson: I object to the question as not relevant."

Mr. Hokanson: I will waive that objection.

"A. In the repair, which way? Repairs at Long Beach, at Manzanillo or at a later date?

Q. (By Mr. Howard): The repairs at Manzanillo and Long Beach.

A. No, there are some here that were not used in Long Beach.

Q. Or Manzanillo? A. Or Manzanillo.

Q. Can you describe such item please?

A. On P-7, these were not used at either place.

Q. That is high pressure fuel lines, manifold to valves?

Mr. Hokanson: For the record, would you state specifically what items were not used at either place?

Mr. Howard: You will have an opportunity to cross-examine this witness, Counsel. You will have your chance.

Mr. Hokanson: I have the right. He is talking

(Deposition of N. A. Cross.)

about an exhibit, Counsel, and if he doesn't describe it accurately, the record won't show it.

Mr. Howard: I have just asked him the question as to what that particular exhibit shows.

Mr. Hokanson: He hasn't identified it.

Q. (By Mr. Howard): What exhibit are you referring to, Mr. Cross? A. P-7.

Q. And what items are shown on that exhibit?

A. 6 AB 6-3221, high pressure fuel line from manifold to valves.

Q. What is the amount of that?

A. In money or in number?

Q. In money? A. \$54.00.

Q. Are there any other items in P-1 through P-13 that you [849] identify as not being furnished in connection with the repair of the main engine of the tanker Urania at Manzanillo or Long Beach?

A. On P-1 the third item, 1V61452-A vertical shaft base bearing bushing at \$4.00. It was not used. I took it down. It was left on board as a spare.

Q. \$4.00.

A. Yes. On P-8, item No. 8, fuel valve nozzle nut gaskets, P-6, it calls for twelve of them. I only used six of them. Six of them were left on board as spares. They are five cents apiece, total amount, sixty cents. Item No. 9 on P-8, there are six, V-6, 3314-A, fuel valve plunger washers at twenty-nine cents each, total, \$1.74. Only three of those were used.

(Deposition of N. A. Cross.)

Q. The rest were left aboard for spares?

A. Yes. I can't be sure of all these small gaskets here.

Q. To the best of your recollection?

A. To the best of my knowledge all the rest of them were used.

Q. Will you look again at P-1 through P-13, Mr. Cross, at those pages where reference is made to time and services performed by you and expenses.

Mr. Hokanson: Identify the page please.

A. P-3.

Q. (By Mr. Howard): Does P-3 extend to P-4? [850]

A. Not by me.

Q. What does P-3 represent?

A. My services and expenses from October 25th to November 11th.

Q. And was all of this period of time actually involved in traveling to and from and while at Manzanillo?

A. Pardon me, I said November 25th before. I read this wrong. It was the 28th.

Q. The amount shown thereon for expenses, were those items actually incurred by you in connection with your travel?

A. They were.

Q. And during the period you were at Manzanillo?

A. They were.

Q. During the time that you were aboard the *Urania* enroute from Manzanillo to Los Angeles, did you talk on any occasion with Mr. Newell by radio telephone?

(Deposition of N. A. Cross.)

A. Will you read that question?

(Question read by reporter.)

A. Yes, on several occasions.

Q. Did you talk with anybody else by radio telephone?

A. Mr. Antippas, the Coast Guard and several fishing vessels. I was using the radio, not radio telephone straight.

Q. Referring to Claimant's Exhibit P-11, will you state what the first item on that document is, please?

A. Services, my services. [851]

Q. For what period?

A. From November 12th to November 25th, 1948.

Q. What were you doing during that period?

A. I was either working on the Urania or traveling.

Q. Traveling where?

A. Back to Oakland, California.

Q. After the repairs had been completed on the Urania at Long Beach, did you perform further services, or further travel on the vessel?

A. Yes, I went from Long Beach to Manzanillo, Mexico.

Q. What was the reason for that?

A. My instructions from my company.

Q. What did you do during that period?

A. Supervised the running of the engine.

Q. Did you debark from the vessel at Manzanillo?

A. That is correct.

Q. When did you return to Oakland?

(Deposition of N. A. Cross.)

A. 9:55 a.m., November 25th, 1948.

Q. How did the engine perform during this period of operation from Los Angeles down to Manzanillo? A. Very satisfactorily.

Q. Referring you to Claimant's Exhibit P-12, will you state what that is, please?

A. My own expenses in connection with the repairs on the Urania and traveling. [852]

Q. That is from Manzanillo back to Oakland?

A. No, part of them were in Long Beach, part of them were the repairs of the water coolers and oil coolers and there is an adjustment of a previous billing.

Q. How did the lubricating oil cooler function during the period that you were aboard the vessel on the voyage from Long Beach to Manzanillo?

A. Very satisfactorily. I never did have any trouble with keeping the oil cool at any time.

Q. On that particular voyage?

A. At any time.

Q. How was the running temperature of the engine during that period?

A. Very satisfactory.

Q. Now, Mr. Cross, as I understand, you said previously that when you received this call at four a.m. on November 5th while the vessel was at sea enroute from Manzanillo to Los Angeles, you checked the engine and found the governor to be jumping up and down? A. That is correct.

(Deposition of N. A. Cross.)

Q. Would that explain the necessity for replacing the governor crosshead assembly?

Mr. Hokanson: I object to the question as leading and on the further ground the matter has been already covered.

Mr. Howard: I will restate the question.

Q. Would that have any relation to the subsequent replacement of the governor crosshead assembly? [853]

Mr. Hokanson: If he knows, and the same objection."

The Court: Overruled.

"A. It could make it wear more, yes.

Q. Assuming that at that time on November 5th the timing gears were worn or galled, what effect would that have on the operation of the governor?

A. It would make the governor jump up and down.

Q. What effect would that have on the future serviceability of the governor assembly?

A. It would have a tendency to make the governor wear more, therefore it would need replacement sooner.

Q. From your first inspection of the main engine of the *Urania* upon arrival at Manzanillo, was there

(Deposition of N. A. Cross.)

any evidence that any loose part or other foreign material had dropped into the timing gears?

A. No.

Mr. Hokanson: I object to the question on the ground that he has testified that the gears had been dismantled at the time and he is therefore not competent to answer the question.”

The Court: At this point we will take a five minute recess.

(Recess.)

Mr. Howard: We had stopped at line 4, page 35. There is an objection after that.

Mr. Hokanson: My objection stands. [854]

The Court: Are you objecting to the preceding question? I assume that you are.

Mr. Hokanson: Yes, Your Honor.

The Court: Overruled.

“Q. (By Mr. Howard): Is it possible for any part to drop into the timing gears on an engine while it is in operation?

A. Will you read that back to me?

(Question read by reporter.)

A. Yes, it is.

Q. If such a thing occurred would it cause a complete breakdown or would it result in gradual wear?

(Deposition of N. A. Cross.)

Mr. Hokanson: I object to the question as being too vague and not specific enough for anyone to answer."

Mr. Hokanson: Same objection.

The Court: Overruled.

"Q. What in your opinion would occur or transpire with reference to the future operation of the engine if such a thing occurred? [855]

Mr. Hokanson: The same objection."

The Court: Overruled.

"A. It would depend on what dropped in. Naturally if a piece of lead dropped in it wouldn't do much harm, if you dropped a bolt down there the engine would almost immediately stop.

Q. Did you have occasion to observe the manner in which the chief engineer was performing his duties during the period you were aboard the *Urania*?

A. Would you read that question please?

(Question read by reporter.)

A. I did.

Q. State what your impression was as to the

(Deposition of N. A. Cross.)

qualifications of the chief engineer to operate that type of engine?"

Mr. Hokanson: My objection is set forth, Your Honor.

(Basis of objection set forth herein page 857, line 6.)

Mr. Howard: I submit this witness is qualified to state his opinion as to the competency of the chief engineer based on his observations and his previous experience with Diesel engines, the experience of the [856] witness with Diesel engines and their operation.

The Court: The objection is overruled.

"A. He was very competent.

Mr. Hokanson: I will for the record object to the question and the answer on the ground that this witness has previously testified that he had never been to sea, holds no license as a marine engineer and he is therefore not qualified to pass upon the qualifications of the chief engineer.

Mr. Howard: You may cross-examine.

(Recess.)

Cross-Examination

By Mr. Hokanson:

Q. Mr. Cross, have you been away from Oakland recently? A. Yes, I have.

Q. When did you return?

A. Last Friday night I believe it was.

(Deposition of N. A. Cross.)

Q. You discussed your testimony with Mr. S. W. Newell? A. Yes, I have.

Q. And you read his deposition?

A. I did.

Q. You discussed this matter with Mr. Clark, the attorney for the Union Diesel Engine Company?

A. Yes.

Q. Have you discussed it with Mr. Antippas?

A. I have not. [857]

Q. Did you at any time prior to today discuss the damage to the main engine of the Urania with Mr. Antippas?

A. Yes, when we were in Long Beach.

Q. What was the substance of your discussion with him?

A. He wanted to know what was the cause of the breakdown out of Manzanillo. At first I didn't know what it was and later events seemed to bear out that it had been the sea water entering into the lubricating oil by way of the heat exchanger.

Q. That was your opinion?

A. Yes, it was.

Q. You told that to Mr. Antippas?

A. I did.

Q. Did Mr. Antippas ever advise that this matter might result in litigation?

A. He might have, I don't recall. It was not discussed at any length. He might have mentioned it. I don't recall right now.

Q. You had some communications with him by

(Deposition of N. A. Cross.)

radio while you were aboard the *Urania*, did you not? A. I did.

Q. What was the nature of those communications?

A. Well, before we had the breakdown he was just wondering how the engine was making out, then we had the breakdown and he wanted to know what it was. I didn't know right offhand and I advised him to have a man at the dock to meet us to take a sample—pardon me, take an analysis of this oil [858] after the breakdown. In another telephone conversation he advised me that a tug was going to pick us up, and other conversations were to the effect, where were we going to dock and who was going to meet me and who was going to be there.

Q. Do you know what was done with that sample of oil that you mentioned?

A. It was lost.

Q. Who took it?

A. Who took it from the engine?

Q. Yes. A. I did.

Q. What did you do with it?

A. I gave it to the chief engineer.

Q. It was thereafter lost?

A. Yes, it was.

Q. Did you have anything to do with the other engineers aboard the *Urania* besides the chief engineer?

A. Yes, they worked with me in the repair of the vessel.

(Deposition of N. A. Cross.)

Q. Now, Mr. Howard asked you what effect would something dropped into the engine have in your opinion. Isn't it true that the effect of such an event would depend entirely upon the nature of the event?

A. The nature of the event or the nature of the piece being dropped into it?

Q. Well, either?

A. Yes, the nature of the piece being dropped into it. If it was something soft such as paper naturally it wouldn't do [859] any harm.

Q. So that it is impossible if you didn't actually observe a piece dropping in there to know what the result would be? A. That is true.

Q. Now, when you first went aboard the *Urania*, the gears had been removed from the engine, that is the timing gears, and were on the deck?

A. That is correct.

Q. And was the vertical shaft still in its bearings?

A. No, the vertical shaft was out. You have to take the vertical shaft out in order to get the timing gears out.

Q. And you took the shaft ashore and found what you describe as a bend of one-eighth of an inch at the base of it?

A. Yes, that is right.

Q. How did you determine the amount of the bend?

A. I had it chucked in a lathe and I first started

(Deposition of N. A. Cross.)

out to find out how much it was off. I just approximated an eighth of an inch by holding a piece of chalk against it while the lathe was running, then I trued it up to a dial indicator.

Q. It was apparent to you, was it, when you saw it on the vessel that it was bent?

A. No, you couldn't see the bend in it. It was a matter of—it was laying on the deck and that made me suspicious of it. It was blocked in such a way that it could very easily have been bent. Somebody could have stepped on it or [860] just its own weight.

Q. What is the diameter of the shaft?

A. It is various diameters. The main diameter is one and 15/16 inches.

Q. Is that a hollow shaft or is it a solid piece?

A. No, it is a solid shaft.

Q. What is its length?

A. Approximately eight foot.

Q. You don't know of your own knowledge how that bend developed in the shaft, do you?

A. No.

Q. Now, when you first inspected the gears, did you discuss or talk about the trouble with the chief engineer?

A. Oh, I am sure I did. I don't recall the exact conversation with him. Naturally he doesn't speak English and we had to have the captain, Captain Bies, as an interpreter.

Q. Did he act as an interpreter for you?

(Deposition of N. A. Cross.)

A. Yes.

Q. Did you inquire into the history of the engine's performance prior to the breakdown?

A. I did.

Q. What was the history?

A. Well, he said the engine had been running quite hot, also that the gears had gone out very suddenly. He expressed an opinion which I can't recall right now—yes, thought the gears went out. He was very satisfied with the engine in general. That is about all.

Q. Did you inspect the log entries? [861]

A. No, I did not.

Q. Have you ever looked at the engine log?

A. At no time, no.

Q. Did he mention any previous stopping of the engine?

A. Do you mean prior to the——

Q. Prior to the breakdown?

A. I don't recall if he did or not.

Q. Did you ask him?

A. No, I did not.

Q. What was his opinion as to the cause?

A. That I cannot recall.

Q. Did you undertake to determine the cause of the galling of these gears before you installed the new gears?

A. Yes, I checked the alignment to make sure that the dowels were in place, and they couldn't have been out of place, they were still in place.

(Deposition of N. A. Cross.)

I checked the oil line that leads to the gears, but it had already been cleaned so I couldn't tell.

Q. What had been cleaned?

A. It had been cleaned already, so I was led to believe that it was plugged prior to that time, but I had no way of knowing.

Q. Did you say plugged?

A. Stopped up, that was an assumption on my part.

Q. Did the chief engineer express a similar opinion?

A. No, I can't recall. He did express that it was oil. I [862] can remember that much because he had changed the oil line at sea after it had started to go out. He had done something. I think he put an additional one in or opened a hole or something.

Q. Do you remember where?

A. No, I don't recall where that was.

Q. You don't recall when that was?

A. No.

Q. Did he tell you he had either changed or——

A. He had done something to the oil line, I can't recall exactly what he had done.

Q. Now, did you send some telegrams when you were at Manzanillo? A. Yes, I did.

Q. Were you with the master of the vessel when these telegrams were sent?

A. I believe I was. I don't know which one you are referring to or any certain ones. I believe I

(Deposition of N. A. Cross.)

was when any that pertained to the work on the engine were sent.

Q. Did you know the contents of the telegram that the master sent Mr. Antippas?

A. I have no way of knowing how many he sent to Mr. Antippas.

Q. With respect to the cause of the breakdown?

A. Yes.

Q. Isn't it true that he stated in a telegram to Mr. Antippas that it appeared that an oil line had clogged causing the [863] gears to gall?

A. That is correct.

Q. And as a result of that information you were suspicious of the supply of lubrication to the gears?

A. No. He sent that telegram on my saying that it was my assumption that it had been plugged. It was after that.

Q. You had installed additional lubricating lines or a line to the gears?

A. Yes, I had installed a line to the gears, an additional one.

Q. And did that supplement the line that was already running to those gears?

A. They were both on there after I left Manzanillo.

Q. Was the one that you installed larger than the original line? A. Yes, sir, it was.

Q. And how did the line that you installed lubricate the gears?

A. By direct flow of oil to the gears.

(Deposition of N. A. Cross.)

Q. When you came aboard you found the oil had been removed? A. That is right.

Q. Was there any oil in the bed, any of the low spots of the bed?

A. I didn't check to see if there was any or not.

Q. Did you check the day tank to see whether there was any oil? [864]

A. There was one other day tank. I wouldn't say it was perfectly dry, but there was none in the sight glass.

Q. What further inspection of the engine did you make beyond ascertaining that the oil had been removed and that the gears had been dismantled?

A. You mean the engine as a whole or just pertaining to the gears?

Q. Yes, the engine as a whole?

A. Checked the fuel controls and the fuel pump setting, the control station.

Q. Do you know what method was used to remove the oil that had been removed prior to your arrival on board?

A. No, I had no way of knowing.

Q. Did you ask the chief engineer what steps had been taken to remove such iron filings or pieces that might have been in the oil as a result of the previous galling?

Mr. Howard: That is objected to. There is no testimony of any iron filings."

(Deposition of N. A. Cross.)

Mr. Howard: I will waive that objection.

“Q. (By Mr. Hokanson): Well, Mr. Cross, you examined the gears? A. Yes. [865]

Q. And could you describe in somewhat more detail than you have given us the nature of the galling?

A. It is very hard to describe something like that. The gears were just plain worn out.

Q. Were they worn, uniformly?

A. No, that particular type of gear does not wear uniformly, quite uniformly, yes, but they wear according to the number of cylinders on the engine and timing on the engine, not dead uniform.

Q. There was galling even into the soft core, wasn't there?

A. Oh, it was all the way down to the soft core.

Q. And from your observation considerable metal had been cut off those gears?

A. That is correct.

Q. And that metal would go into the lubricating oil, would it not? A. It would be.

Q. You did not ascertain what had been done to flush that oil out of the system?

A. Yes, I did.

Q. And foreign particles?

A. Yes, I did. I didn't ascertain how they got it out. I made certain that it had been washed out. The foreman had some laborer remove the—

(Deposition of N. A. Cross.)

Q. I didn't understand your last answer.

Perhaps to shorten the record would you read it back to me?

(Answer read by reporter.) [866]

Q. (By Mr. Hokanson): Was it at your request that the whole system was flushed out?

A. It had been done prior to the time of my arrival.

Q. So you don't know what actually was done by way of washing it out of your own knowledge?

A. No, only that when I got on board it was clean.

Q. To the extent that you examined the engine it was clean? A. That is correct.

Q. Did you inspect all of the lubricating oil lines that serve the entire engine?

A. No, I did not.

Q. Now, the upper helical gears were not badly worn, is that correct?

A. That is correct.

Q. Were they worn at all?

A. There was a certain amount of wear marks on the gears, yes, sir.

Q. Was the wearing abnormal on the upper gears? A. No, it was not.

Q. And it was only the lower gears then that were galled? A. That is right.

Q. Did you examine the second set of gears that wore out? A. Yes, I did.

(Deposition of N. A. Cross.)

Q. Were both sets worn out, the upper and lower I have reference to?

A. Yes, they were.

Q. With respect to the second set of gears, was there any difference between the amount of galling on the upper gears [867] as contrasted with the lower gears?

A. Yes, the upper gears were not near as bad as the lower gears.

Q. And what was the character of the galling on the second set of gears that wore out?

A. Practically the same, looking at the first set, you couldn't distinguish the difference between the first set that wore out and the second set.

Q. They were not regularly, uniformly worn out?

A. That is right.

Q. The wearing was erratic, was it not?

A. No, there was just a—may I clear that up? May I clear up the wearing on those gears? Every tooth wears but it wears in such a way that some of the teeth are worn a little more than the other one and I don't know whether you could measure it but you can see it if you look at it closely, a worn out gear of that nature.

Q. You have reference now to these particular gears?

A. Yes, I do.

Q. Did you examine the thrust bearings at Long Beach?

A. I did.

Q. Were any thrust bearings replaced?

A. No, they were not. Oh, pardon me, you are

(Deposition of N. A. Cross.)

speaking of the thrust bearing of the main engine or of the vertical shaft. [868]

Q. Of the vertical shaft.

A. Yes, two of them were replaced.

Q. You said previously they were not worn?

A. I was talking before of the main bearing thrust bearing which is a common way of expressing a thrust bearing.

Q. Were the thrust bearings on the vertical shaft worn? A. Yes, they were.

Q. Requiring replacement? A. Yes.

Q. Those are ball bearings?

A. Roller bearings.

Q. How were they worn, what was the nature of the wear?

A. A pitting on the rollers of the bearing and they could perhaps could have been used for some time yet, but seeing as we were close to a supply where new ones could be obtained it was advisable to put new ones in.

Q. What is the number of teeth on the lower helical timing gears?

Q. (By Mr. Howard): If you know?

A. I do not know.

Q. (By Mr. Hokanson): What is the normal pitch, if you know?

A. I couldn't answer that either.

Q. Do you know what the helix angle is on those gears? A. No, I don't.

(Deposition of N. A. Cross.)

Q. Do you know what the diametrical pitch is?

A. No, I do not.

Q. Was there any evidence of flaking off of these gears?

A. How do you describe flaking on a gear?

Q. I am asking you if you can answer the question?

A. I can't answer that question. I don't understand it.

Q. What was the color of the gears?

Mr. Howard: When, Counsel, when are you referring to?

Q. (By Mr. Hokanson): The gears that you examined on the vessel when you arrived.

Mr. Howard: At Manzanillo?

Mr. Hokanson: Yes.

A. The color of steel.

Q. Normal color?

A. Normal color of steel.

Q. What was the color of the gears that were removed at Long Beach? A. The same.

Q. Would you describe to us how you installed the lower helical gears on the shaft at Manzanillo?

A. You mean the operation of putting all the gears in or just putting the gear on the shaft?

Q. In putting them on so they would mesh?

A. You put the vertical shaft and the lower vertical shaft gear into the engine to the lower vertical shaft base bearing. I lined the vertical shaft up through the upper vertical shaft bearing. I as-

(Deposition of N. A. Cross.)

sembled the intermediate bracket assembly, [870] assembled it onto the engine, checked the runout of it by turning the engine over and feeling the backlash of the gear.

Q. How did you establish the alignment, visually?

A. By feel. You can do it with feeler gauges, straight edges. It depends on which alignment you mean and how.

Q. The alignment of the gears on the vertical shaft?

A. It is self-aligning in that the bracket is placed in a set position, I mean, pardon me, that would be all right. The vertical shaft base bearing is doweled at the base. Alignment therefore cannot change unless the dowels are moved or the bracket is loosened or one of the thrust bearings was particularly worn out.

Q. Was there any wear on the thrust bearing when you examined it at Manzanillo?

A. Yes, the same amount that I had found at Long Beach.

Q. Did you replace it there?

A. No, I didn't have the replacement there.

Mr. Howard: What thrust bearing are you talking about?

Mr. Hokanson: The vertical shaft thrust bearing.

Q. (By Mr. Hokanson): So that the method that you used in aligning these gears involved cer-

(Deposition of N. A. Cross.)

tain assumptions namely that the wearing on the thrust bearing was not sufficient to cause it to be out of alignment and that the shaft was true and that the dowels had not been enlarged in [871] any way?

A. No more so than a new engine built at the factory, the same as we do at the factory. Of course, I can't elaborate on all the ways we do align a gear. If I had an engine here I could show you definitely exactly how it is done, but I can't elaborate on every detail. It is done by the same method as I do it in the shop or instruct my men to do it in the shop.

Q. You didn't blue the teeth in installing the gears, did you?

A. Yes, I wiped it. I used white lead in place of bluing.

Q. White lead? A. Yes.

Q. Do you know who cut the set of gears that you installed?

A. I believe it was Johnson Gear Company—pardon me, I don't know for sure.

Q. Do you know how they were checked?

A. No, I am sorry, I do not.

Q. Did you receive any inspection report on the gears that you installed?

A. No, the gears come into the shop under a specified inspection from the gear people. They may have come in with a batch of a hundred others. All have to pass that inspection at the gear company."

(Deposition of N. A. Cross.)

Mr. Hokanson: I move to strike that last as hearsay. [872]

Mr. Howard: I have no objection.

The Court: It is stricken.

“Q. Do you know why the damaged gears were not saved in this case? A. No, I do not.

Q. Do you know what was done with them?

A. Let me change my last answer, they were saved until the time I hit Los Angeles, both sets.

Q. You kept them?

A. On board the ship.

Mr. Howard: Counsel, for the record I will state that we are making an effort to obtain the gears for the trial.

The Witness: The gears were safe as far as I know. Mr. Pike inspected the gears in Long Beach when I arrived there. After that I had no worry of what happened to the gears.

Q. (By Mr. Hokanson): Other than the inspection that you already testified to, you made no further effort to determine the cause or failure of the first set of gears before installing the second set?

A. No, I believe that was sufficient.

Q. Did you inspect the camshaft for binds at Manzanillo?

A. Only to the extent of turning it before I made my inspection of the upper vertical shaft gears.

(Deposition of N. A. Cross.)

Q. Were there any filters in the engine when you arrived at Manzanillo?

A. I couldn't say whether they were in when I arrived there or put in after I arrived. I know there were new filters in.

Q. Did you see the old ones?

A. No, I did not.

Q. Do you know what was done with them?

A. No, I do not.

Q. Did you see the oil that was put into the engine at Manzanillo after the gears were installed?

A. I saw it after it was put into the engine, yes.

Q. At what point did you examine the oil?

A. Only to the extent of looking at it, that is all.

Q. You don't know where it came from?

A. No, I do not.

Q. Do you know what kind of oil it was?

A. No, I do not.

Q. You talked with Mr. Newell by telephone while you were at Manzanillo, did you not?

A. I can't recall whether I did or not. Possibly I did. Most likely I did.

Q. Mr. Newell testified that you discussed the possible causes of the galling of these gears and stated that you had determined that the oil was brown and you both concluded that would be caused by water, do you remember that conversation?

A. Yes, that was after I left Manzanillo, after

(Deposition of N. A. Cross.)

the second breakdown. [874]

Q. When did you leave Manzanillo?

A. Approximately five p.m., November 3rd.

Q. You had a telephone conversation with him on November 3rd, didn't you, of extended duration?

A. That I couldn't say for sure.

Q. When did you first know that the oil was brown?

A. Approximately 6:35 a.m., Friday, November 5th.

Q. And not before that time?

A. No, I did not.

Q. Do you remember sending a telegram dated November 1st to your company from Manzanillo?

A. I don't recall the exact date of a telegram. I know of one telegram I sent from Manzanillo, yes.

Q. I will ask you, Mr. Cross, whether you sent the following telegram on November 1st to Unigauss, which I presume is the cable address of your company in Oakland: "Have Advised Owners of Urania When Vessel Leaves Manzanillo Stop Some Port West Coast USA for the Services of an Additional Serviceman May Be Made Available Stop Appearance of General Workmanship Done in Seattle Makes It Advisable Period Stop All Air Water Lubricating Oil Tubing Should Be Replaced Stop Bearings Liners Pistons Etc Should Have Very Close Inspection Stop Will Advise You of Their

(Deposition of N. A. Cross.)

Decision Also Date of Sailing and Arrival in Port."

Did you send that telegram? A. I did.

Q. Why did you advise the owners to go to another port on [875] the West Coast of the United States where the services of an additional man would be made available?

A. Manzanillo hasn't the facilities for the work I was doing. I didn't have the tools or the equipment to do the work with. The temperature was 120 to 130 degrees in the engine room. I thought it advisable to go where the work could be accomplished.

Q. You were not then certain of the effectiveness of the repairs that you had made at Manzanillo?

A. Yes, I was. I didn't think about that. I didn't like the looks of the rest of the engine, the tubing and that. I had nothing to do with any of the tubing on the rest of the cylinders. It was badly kinked. The control station didn't work properly. The fuel was not set to my satisfaction after I had set them there. I wanted to take out the nozzles. I didn't have the facilities there to do the work. I would never have sailed out of there if I figured the gears were going to go out of there. That would only be risking my neck. It wouldn't be very sensible.

Q. You felt then that there was some further deficiency in this engine that needed attention, is that correct? A. That is correct.

Q. But you were completely satisfied that you

(Deposition of N. A. Cross.)

had made an effective repair of the immediate danger? A. That is correct. [876]

Q. What was the appearance of the general workmanship that caused you to advise them to put into a West Coast port?

A. The tubing being badly kinked, the fuel controls not set, the engine had been running hot. I attributed that to the fact that maybe the fuel was not set properly. The fuel nozzles needed work.

Q. Was all the tubing kinked?

A. Not all of it, but a very good portion of it was.

Q. As to air, water and lubricating oil?

A. That is when I am speaking of tubing, that is copper tubing, not the piping on the engine.

Q. You say all air, water, lubricating oil tubing?

A. Not all, I didn't say all of it, that it all should be gone over and those that were badly kinked renewed.

Q. You didn't know what was causing this engine to overheat, is that right?

A. No, I didn't.

Q. Where was it overheating?

A. The water temperature was going too high.

Q. The water temperature?

A. That is right.

Q. In the jackets? A. Yes.

Q. But the exhaust temperatures were normal, weren't they? A. That is correct.

Q. The lubricating oil temperature was all right,

(Deposition of N. A. Cross.)

wasn't it? A. It was all right.

Q. You never had any trouble with that?

A. No. [877]

Q. Why did you think the bearings, liners and pistons should have a very close inspection?

A. Whenever I see work that has a bad appearance on the external of an engine I like to see the inside to see if the same workmanship has been done on the inside of an engine.

Q. Did this telegram reflect any lack of confidence on your part in the ability of these engineers properly to operate that engine and to maintain it?

A. It was not meant to.

Q. You did accompany the vessel after complete repairs had been made at Los Angeles back to Manzanillo, didn't you? A. That is correct.

Q. And you have stated that what you did was supervise the operation of the engine on that voyage?

A. Yes, I meant it in a way that we were satisfied that repairs had been effected.

Q. Why then was it necessary to go with the vessel after the repairs had been completed?

A. That was my orders.

Q. From whom?

A. The Union Diesel Engine Company.

Q. And you brought along a spare set of lower and upper helical timing gears, didn't you?

A. No, I believe they picked the spare set up in Manzanillo. The lower ones; I may have had

(Deposition of N. A. Cross.)

an upper set. There was a [878] set shipped to the vessel prior to my departure from Oakland. They had become lost in transit and they were going to keep them on board as spares and they are still on board as spares to this day, to my knowledge.

Q. Were you satisfied that the repairs made in Los Angeles were final and complete?

A. I am.

Q. Were you at the time you left the vessel for Manzanillo after November 11th?

A. I was.

Q. Did you so advise your company?

A. I believe I did. I couldn't say for sure whether I did or not. I sent in a report daily. I was quite confident that my report contained information that the engine was in good working order.

Q. On the evening of November 4th you opened up the engine to look at the timing gears, didn't you?

A. I believe I did at nine p.m.

Q. And they were in good order at that time?

A. They were.

Q. The engine operated normally at that time?

A. To my knowledge it was. I believe that is about the time it started to run warm.

Q. And about 0350 you received a call that the engine was knocking?

A. Approximately four a.m. I received a call.

Q. Seven hours later? [879]

A. No, it was almost immediately.

Q. I have reference to the time interval between

(Deposition of N. A. Cross.)

your last inspection of the gears and the time you received this call?

A. Oh, yes, that is correct.

Q. And it was at about nine p.m. or 2100 on November 4th that the auxiliary standby pump was put into use?

A. As much as I recall. I couldn't say for sure.

Q. Did you recommend its use?

A. I did not.

Q. Did you know it was being used?

A. I did.

Q. You had no trouble maintaining the temperature of the lubricating oil? A. No.

Q. And prior to that time it had not been put into use, prior to 2100 on November 4th, to the best of your recollection, the auxiliary standby pump had not been used? A. That is correct.

Q. When you responded to the call that you received at four a.m. on the morning of November 5th, did you open up the engine to inspect the timing gears?

A. Not right away. I slowed it down immediately.

Q. Why did you do that?

A. Why did I slow it down?

Q. Yes.

A. It was hammering very badly.

Q. Did you know what the cause of that hammering was?

A. I was quite sure I did. [880]

(Deposition of N. A. Cross.)

Q. Was it your desire to stop the engine immediately? A. If I recollect, it was.

Q. When did you open up the engine to inspect the gears thereafter?

A. Approximately 6:35 a.m., November 5th.

Q. From your examination at that time you determined that the gears were galled again?

A. That is correct.

Q. And from that time until you arrived at Los Angeles, how many hours was the engine running?

A. It was just a matter of perhaps four to eight hours of very light running.

Q. Did you cause the oil to be removed at about 6:35 a.m., November 5th?

A. Yes, or shortly thereafter.

Q. And new lubricating oil put in?

A. That is right.

Q. Did you ask the chief engineer whether he had ever employed that standby pump on the voyage down before you came aboard at Manzanillo?

A. I believe I did. I couldn't say for sure.

Q. If you can't be sure you don't remember what his answer was? A. That is right.

Q. On the basis of your acquaintance with the performance of Union Diesel engines of that type, what could cause the vacillation of the r.p.m. upward and downward without the [881] actual use of the throttle to cause the change?"

Mr. Howard: I waive the objection.

"A. I have never seen it happen in a Union

(Deposition of N. A. Cross.)

engine with the setup that was on board the Urania, that particular type of installation.

Q. (By Mr. Hokanson): Not having seen it happen, you wouldn't be able to furnish us with a possible cause of that condition?

A. On other types of engine, but on this type of engine if somebody was playing with the engine I could see it happening, but not otherwise, no.

Q. By playing with the engine you mean what?

A. Changing adjustments while it was running.

Q. Now, turning for a moment to these items that you have been testifying about, you have an item, new packing fuel injecton. Is that related to this breakdown?

A. The packing of the injectors?

Q. Yes. A. No, not directly, no.

Q. That was something that was independent of the gear failure? A. That is correct.

Q. What about two new fuel pump disc valves?

A. Check valves?

Q. Perhaps it is check, I got it as disc valve.

A. That was independent of the breakdown.

Q. You are sure that the governor crosshead assembly was caused by this gear failure?

A. No, I am not sure.

Q. What about new control station friction disc?

A. That was not caused by the breakdown, no.

Q. You replaced some lubricating oil manifold branch pipes, why was it necessary to replace them?

(Deposition of N. A. Cross.)

A. I don't recall right now. They may have been changed when we took them off to inspect the oil system or they may have become lost. I couldn't say right now.

Q. Could some defect in those pipes affect the amount of lubrication flowing to the gears that were galled?

A. No, it is not on a direct route to the gears, it is on a branch line.

Q. Does it in any manner affect the circulation of oil throughout the gears?

A. No, only to the bearing it is going to.

Q. Did you ask the chief engineer whether he had replaced the filters at Manzanillo?

A. I couldn't say for sure. I am sure I did. I know I wouldn't have left without making certain there were filters in there. [883]

Q. Did you ask him what the condition of the ones that had been discarded was?

A. Not that I recall.

Q. That would show dirt or extraneous matter, wouldn't it, on inspection of the filters?

A. Yes.

Q. Could kinking in your lubricating oil lines affect the amount of lubrication furnished to the various parts of the engine? A. Yes.

Q. I am interested, Mr. Cross, in knowing why you put in this additional line to the lower helical gears. You had established that the original lines were clean.

(Deposition of N. A. Cross.)

A. That is basic instructions from the factory on this model engine, whenever we are working in the vicinity of that gear to put an additional line into it.

Q. Is that because the company regards the original system of being doubtful sufficiency to lubricate those gears?

A. No, there has been lots of these engines out in service for years. We found that the capacity of the pump is much larger and we can use the additional oil. We never found a part to be harmed by having too much oil to it. It is standard practice on that model engine.

Q. That is merely a safety factor that you apply in putting on an additional line?

A. Yes.

Q. What is the lubricating oil capacity of that type of Union Diesel Engine?

A. The supply of the day tank you mean? [884]

Q. Yes. A. I have no way of knowing.

Q. In terms of gallons?

A. I know it is more than adequate for the engine, but I couldn't say exactly the number of gallons or anywheres near it.

Q. Did you make any new model changes on the governor at Manzanillo?

A. No, I did not.

Q. Aren't there certain auxiliary pumps driven by the helical gears or the vertical shaft?

A. By the vertical shaft, there are the lubri-

(Deposition of N. A. Cross.)

cating oil pumps, both the pressure pump and the sump pump.

Q. Anything else?

A. The governor. That is all.

Q. Did you examine all those to see if any weight or pressure was required to drive those pumps and the governor, any undue weight?

A. The governor wouldn't take any additional. It is not gear driven. It is an integral part of the shaft when assembled. The pump I did not.

Q. Is timing an engine a function that you perform at the factory?

A. What kind of timing?

Q. Timing the engine so that the valves are synchronized with the cycle of the engine?

A. That is correct.

Q. Did you have any particular trouble in timing this engine? A. I did. [885]

Q. Why?

A. The flywheel had been marked wrong, or a wrong flywheel of a different model had been put on the engine and I had timed it to the marks on the flywheel.

Q. Did you use an indicator?

A. Not in the sense of meaning an instrument. We have one with a pointer that we use as an indicator, yes.

Q. After you had timed the engine to your satisfaction, you then ran the engine full ahead, didn't you? A. That is right.

(Deposition of N. A. Cross.)

Q. Then you found it to be acting erratically, is that correct? A. Yes.

Q. In what manner was its actions erratic?

A. The valves were hitting the pistons.

Q. That is an abnormal condition, isn't it?

A. It is.

Q. Do you know why that was true in this case?

A. Because the markings of the flywheel being wrong and timed to those marks.

Q. The markings on the flywheel were wrong?

A. That is correct.

Q. How did you determine that?

A. Sent for some blueprints from the shop, sent in the model number of the engine and they sent me down the blueprint. I checked back on the flywheel, checked it off and they had it marked wrong. [886]

Q. And this was done while you were at Manzanillo?

A. No, that was done when I pulled into Long Beach.

Q. Do I understand you to say then that you had the wrong information with respect to the markings on the flywheel when you went down there?

A. The flywheel was marked wrong.

Q. By the factory?

A. Presumably, I wouldn't say for sure.

Q. When you get that condition of pistons hit-

(Deposition of N. A. Cross.)

ting the valves, if that obtained for any period it could cause serious damage to the engine, couldn't it?

A. If it busted off a rocker arm, if it hit very hard. This was not a direct hit. It was a carryover of the valve from the speed, leaving the rocker arm.

Q. It gives you a backlash throughout your camshaft, doesn't it?

A. To a certain extent, yes.

Q. You found some difficulty with your fuel injection valves?

A. No, I took them apart, examined them, re-packed them, checked them. That was in Long Beach I did this work.

Q. Do you know what the figures in terms of degrees are on the timing of this engine with reference to the fuel valves?

A. I can look it up in the instruction book. I think it is fifteen degrees. It may be ten. There are quite a number [887] of them. Each model has a different number of degrees.

Q. You are referring now to Exhibit O, the manual for use with this type of engine?

A. Yes. Twelve degrees before top center.

Q. Twelve degrees before top center?

A. Yes.

Q. What about the exhaust valves?

A. Forty degrees. I don't know on this engine whether this book is correct for that engine or

(Deposition of N. A. Cross.)

not. You will have to ask Mr. Newell on that.

Q. That is the manual put out for this engine?

A. Perhaps it is, but this one particular engine I couldn't be sure about without checking on our drawings in the shop.

Q. Why not?

A. This is the first of our series of engines. I am not dead sure that this is correct for that engine, on that particular engine.

Q. What about the inlet valves?

A. That would be the same thing. I couldn't be sure. I would have to check my drawings.

Q. How did you time the camshaft?

A. Where, in Manzanillo or——?

Q. Manzanillo.

A. I timed it the first time to the markings on the flywheel. When I found that was wrong I dropped it back two [888] teeth and set it there.

Q. Isn't the timing of the fuel a very critical part of timing the engine? A. It is.

Q. And that is practically impossible to do without the use of an indicator, isn't it?

A. I would say it was not possible to do without an indicator.

Q. Was not possible?

A. Not to do it correctly.

Q. Did you have an indicator? A. I did.

Q. What kind of an indicator?

A. The one supplied by the factory.

Q. What does an indicator show?

(Deposition of N. A. Cross.)

A. I am afraid you are confused on that. Are you talking about indicator cards of an engine or an indicator for timing or what?

Q. For timing?

A. It shows the amount of lift on the fuel and the timing of the fuel.

Q. Does it show loss of compression by leakage?

A. No, that is a different type of indicator.

Q. Will the late closing of an exhaust valve or the early opening of the inlet valve show by the indicator that you used?

A. No, it does not. You are speaking of an indicator that you take pressures on an engine with. You are talking about [889] that kind. You have been reading something somewhere. You are altogether wrong on an indicator of that type. It is altogether something different.

Q. Mr. Cross, I am not testifying here. I am merely trying to elicit some answers.

A. I am just trying to clear that up.

Q. What is the method of purifying the oil on the main engine of the *Urania*?

A. There are three different types of purifying oil, one is when it goes out of the engine into a strainer, a basket type strainer. The oil goes through a metal edge filter and then you can bypass a certain portion of the oil through a sock type filter.

Q. Would these all be classified as a strainer that you mentioned?

A. No.

Q. What would be the strainer?

(Deposition of N. A. Cross.)

A. The strainer, the one I call the strainer strains the oil coming out of the engine into the day tank.

Q. Where is that located on Exhibit O?

A. (Witness indicates on Exhibit O.)

Q. You are referring to, "L O strainer" on figure A of Exhibit O, is that correct?

A. That is correct.

Mr. Howard: It is so marked.

Mr. Hokanson: It was originally marked by Mr. Newell. [890]

Mr. Howard: Right.

Q. (By Mr. Hokanson): What is the principle of that strainer, how does it function?

A. It cleans the oil. The oil goes through it, collects the dirt on the outside of a basket type strainer.

Q. Did you examine it at Long Beach?

A. I am sure I did. I don't recall right offhand. All the oil piping and oil system was washed out there and taken apart for that matter.

Q. Did you examine it at Manzanillo?

A. I did.

Q. Had it been cleaned?

A. It had been cleaned already.

Q. And was it clean?

A. It was clean.

Q. Are there any other purifying systems on the lubricating oil of that engine other than what you have already described?

(Deposition of N. A. Cross.)

A. Not that I can recall.

Q. Now, is the oil pump that circulates this lubricating oil engine driven? A. It is.

Q. How is the pressure controlled?

A. By a pressure regulating valve.

Q. What is the rated pressure for it?

A. The book calls for fifteen to twenty-five pounds.

Q. Referring to the lubricating oil cooler, what is the sea water operating pressure range in the lubricating oil cooler?

A. In regards to just using the pump on the engine?

Q. The engine pump, yes.

A. Seven to eight pounds.

Q. Did you examine the lubricating oil cooler at Long Beach? A. I did.

Q. When it was removed first from the engine?

A. That is correct.

Q. Were you present when it was removed?

A. I was.

Q. Did you move the flanges on the salt water side? A. I did.

Q. And looked into the cooler and found some scaling? A. That is correct.

Q. Did you look on the lubricating oil side?

A. I did.

Q. What did you find?

A. The lubricating oil had been going through there.

Q. Was it clean?

(Deposition of N. A. Cross.)

A. If I recollect, it was.

Q. You mentioned that the lubricating oil cooler functioned well after you left Los Angeles, that is, after November 11th until your arrival at Manzanillo? A. That is correct.

Q. What inspection did you make to determine that to be the cause?

A. The oil was clean, no water in it.

Q. You inspected the oil? A. Yes, I did.

Q. And on that basis you assumed that the cooler was functioning properly?

A. That is right.

Q. Did you make any inspection of the lubricating oil cooler [892] after you shoved off from Manzanillo for Los Angeles?

A. I did not, only to the extent that the lubricating oil was cool enough.

Q. So that so far as you know it functioned as well on the way from Manzanillo to Los Angeles as it did after you left Los Angeles on your return trip?

A. No, I found water in the oil afterwards which was attributed to the fact that it was coming from the oil cooler.”

Mr. Hokanson: I move to strike that as not responsive, the answer to the question at the bottom of page 66.

The Court: I do not see that it is not responsive. It is explanatory. The objection is overruled.

(Deposition of N. A. Cross.)

“Q. Removing that assumption, Mr. Cross, and based on your own knowledge of what the oil temperatures were, the cooler functioned roughly the same on the trip from Manzanillo to Los Angeles as on its return trip, didn't it?

A. The oil cooler did, yes.

Q. Do you know why the engine was running hot? A. Do I know why?

Q. I want to know if you know.

A. Definitely? [893]

Q. Yes.

A. No, not for sure, nothing can be sure around Diesel engines.

Q. Would it be normal for the exhaust temperature on one cylinder to be as much as a hundred degrees more or less than the average temperature on the others on this type of engine?

A. It is a condition we find quite often. It is not advisable to run it at that much difference.”

Mr. Howard: That is objected to as being beyond the scope of direct examination and proper cross examination, this line of questioning, nothing at all in the direct examination about exhaust temperatures.

Mr. Hokanson: This witness has testified he found the engine running hot. I think this is very pertinent to that particular subject, which was opened up on direct examination.

Mr. Howard: Touching on that, I will withdraw the objection.

(Deposition of N. A. Cross.)

“Q. Why not?

A. It should be balanced out to within approximately forty degrees. [894]

Q. Can a competent engineer usually take care of that difference? A. Oh, yes.

Q. What is your opinion as to the reason this engine was running hot? A. When?

Q. When you left Manzanillo on November 4th, let us say. A. I couldn't say for sure.

Q. Isn't it true, Mr. Cross, that a safety factor is built into a lubricating oil cooler in this respect, that the lubricating oil pressure is higher than the salt water pressure?

A. It is not built into the cooler, no.

Q. I mean it so operates, doesn't it?

A. That is the normal operating procedure, yes.

Q. And if your pressure on the salt water side is less than on the lubricating oil side, you can't possibly get water into the oil, isn't that true, through that means?

A. I wouldn't say it was impossible, but not very likely.

Q. Assuming that there were leaks in the cooler and that the oil pressure is higher than the salt water pressure, could you get salt water into the oil?

A. It is possible, it is not very likely.

Q. Why is it possible?

A. That I don't know. I can't explain lots of things.

(Deposition of N. A. Cross.)

Q. When you went aboard the *Urania* at Manzanillo and had [895] effected her repairs to the gears, was her destination then fixed from that point?

Q. (By Mr. Howard): If you know?

A. Will you repeat that question?

(Question read by reporter.)

A. As far as my orders read they were. I don't know for sure. My orders read to go to Manzanillo, install the gears, come back to Los Angeles with the vessel.

Q. Did you give any instructions to the master concerning where you were going?

A. No, I did not. You are talking about the captain of the vessel?

Q. Yes. A. No.

Q. In other words, it had already been established that she was returning to Los Angeles as far as you know?

A. When I left the shop it was, yes.

Q. Well, wasn't the vessel after you installed the new gears in good enough condition to proceed on her voyage to Panama?

A. The orders when I left Oakland were to return to Los Angeles with the *Urania*.

Q. If you felt that the gear installation was sufficient to bring that vessel 1200 miles back to Los Angeles, do you think she was in good enough condition to go 1700 miles to Panama? [896]

A. I believed at that time yes, except that it didn't maneuver properly even yet.

(Deposition of N. A. Cross.)

Q. And what do you mean by maneuver?

A. Starting and stopping, reversing, the air tubing, the condition of the air tubing had not been straightened out yet, and of course, it could have got to Panama. When it got to Panama something would have had to be done. It would have to have some work done on it.

Q. On the air tubing? A. Yes.

Q. On this engine, can you operate it ahead and then astern without bringing the engine to a stop?

A. No.

Q. With respect to the standby pump that we have discussed, is that an emergency hookup on the Urania?

A. The standby fire pump you are talking about?

Q. Yes.

A. It is always connected into the engine, yes. It has a flange that can be reversed if I remember correctly. In fact, you could shut it off. It would be tied in but the water wouldn't go through, some sort of reversible flange affair.

Q. Is there a valve on the sea water outlet side of the cooler?

A. I don't follow the question here. Can you point it out here? (indicating)

Q. It is my assumption that sea water that flows through [897] the heat exchangers, flows out into the sea?

A. That is correct, it flows through the heat exchanger and out.

(Deposition of N. A. Cross.)

Q. Is there a valve on the outlet side?

A. You mean to keep the water from going overboard at all?

Q. That is right, to control the outlet.

A. No, not to my knowledge.

Q. It flows freely through?

A. Yes, that is correct.

Q. Is there a gauge on the water pressure side of those heat exchangers to show the pressure?

A. The pressure of the water?

Q. Yes. A. Yes.

Q. Is there a gauge on the oil side as well of the cooler, the lubricating oil cooler?

A. Yes.

Q. Did you check those pressures?

A. Yes, that would be normal operating procedure.

Q. Were the pressures within the rated pressures established in your manual?

A. At what time?

Q. Prior to November 4th?

A. Yes, I think they were.

Q. Did you check them after November 4th?

Mr. Howard: At what time?

A. You mean——?

Q. (By Mr. Hokanson): After November 4th and prior to [898] your arrival in Los Angeles?

A. The engine was running so little I probably checked it. Any time you go by an engine in the engine room you look at the gauges. It is like

(Deposition of N. A. Cross.)

driving an automobile. I am sure I did, but I can't recollect it right now.

Q. Is there a temperature gauge on the heat exchanger to show the temperature on the water side?

A. It is not directly on the heat exchanger. You could tell how hot the water is going through the heat exchanger and how hot the oil is after it has gone through. It is not directly connected there, but it is in the same lines.

Q. And those temperatures are checked along with other gauges and instruments on the engine, aren't they, in normal operating practice?

A. That is right.

Q. And they should be logged, shouldn't they?

A. That is up to the engineer. It is up to the company you work for. Certain vessels don't even keep a log. It is something that I don't have any control over or have anything to do with. I don't log any of it myself on a vessel.

Mr. Hokanson: You may examine the witness.

Redirect Examination

Q. (By Mr. Howard): Do you know whether another sample of oil was actually obtained from the Urania engine after arrival at Long Beach?

A. Yes, there was.

Q. Who obtained that? [899]

A. I couldn't say exactly who obtained it.

Q. Were you present when it was obtained?

A. Undoubtedly, yes.

(Deposition of N. A. Cross.)

Q. Where was the sample obtained from?

A. From the engine itself. I couldn't say exactly whether we took it out of the bed or out of the oil line or—you are speaking of which one? There were several samples taken.

Q. The one that you had an analysis made of, where was that?

A. I believe it was——

Mr. Hokanson: I object to the question on the ground it is leading and involving an assumption here that hasn't been established as a fact."

Mr. Hokanson: I object on the ground it involves an assumption that hasn't been established; namely, that he made an analysis of the oil, your Honor.

Mr. Howard: In so far as the assumption would indicate that the witness had an analysis made of the oil, that is probably a proper objection, but the witness has stated he recalls a sample was obtained for an analysis.

The Court: He does not testify to the analysis, does he?

Mr. Howard: No, your Honor, he doesn't [900]

The Court: The objection is overruled.

"A. No, I don't know for sure exactly where it came from, somewhere in the engine oil sump.

Q. Were any other samples obtained of the oil?

A. Yes, several were taken.

Q. By whom?

(Deposition of N. A. Cross.)

A. By Mr. Newell and myself.

Q. Where were those obtained from?

A. Taken from the lower part of the sump in the main engine, and the lower part of the camshaft housing.

Q. What was done with those samples?

A. Just sampled by taste, feel, by finger.

Q. Did you taste it?

A. Yes, sir, I did.

Q. What did the taste disclose?"

Mr. Hokanson: That is objected to as involving a conclusion of the witness, who is not competent to answer.

The Court: Overruled.

"A. It appeared to be salt water. [901]

Q. (By Mr. Howard): Did you preserve any of those sample, Mr. Cross?

A. No, I did not.

Q. Who was present when they were taken?

A. Which samples are you talking about?

Q. The ones that you referred to that were taken by you and Mr. Newell?

A. Mr. Firth, Mr. Pike, Mr. Newell. Mr. Antippas might have been there. That is all I can recall. The engineer might have been there. I couldn't recall that for sure either.

Q. Was there any evidence of any part being dropped into the gears when you inspected the engine after the second breakdown?

A. No, none.

(Deposition of N. A. Cross.)

Q. After you had checked the alignment of the vertical shaft by chucking it in the lathe at Manzanillo, did you reach any conclusion as to whether the condition of that shaft had any bearing on the galling of the gears?

Mr. Hokanson: I object to the form of the question as involving the conclusion of the witness."

Mr. Howard: He has already testified on that subject on cross-examination.

The Court: The objection is overruled.

Mr. Hokanson: It is his witness, Your Honor.

The Court: I think the ruling of the Court is proper. It will stand.

"A. It was my opinion that they had not had anything to do—the bend had been done after the engine gears had gone out because of the fact of the location of the bend. The bend was in such a place that if it was in the engine it would have still run true. It is very hard to describe this bend exactly. You should see it or have it pointed out to you on another engine.

Q. After the vertical shaft was reinstalled in the engine with the replacement gears, did you encounter any difficulty in getting those gears to mesh properly?

A. I did not. They went back in their original places on the dowels. I checked them. They were in very nice alignment.

Q. These gears that were put into the engine at Manzanillo were taken there by you, is that correct?

(Deposition of N. A. Cross.)

A. That is correct.

Q. Did they come out of—where did you obtain them?

A. I obtained them from the stockroom of our company.

Q. Did you inspect those gears before the installation to determine whether they were in good condition?

A. I gave them my own visual inspection to be sure there were no burrs. The heat treating company had them checked. [903] for hardness before I left Oakland for Manzanillo.

Q. And what did that visual check determine?

A. They were in very good shape.

Q. Now, as to the gears that were put in the engine at Long Beach, were they the same type of gears?

A. The same type.

Q. Had they been specially treated in any way?

A. Not to my knowledge.

Q. Did you make any suggestion one way or the other to the chief engineer as to the use of the standby pump after the difficulty was reported to you at four a.m. on November 5th?

* * *

A. I don't believe I did after the trouble. After they had the trouble with the gears there was no necessity of doing it. The engine was running so slow there was no trouble at all keeping it cool.

Q. Prior to that time had you made any sug-

(Deposition of N. A. Cross.)

gestion to the chief engineer about the standby fire pump being employed?

A. I believe I did, but I can't be certain of it.

Q. What is your recollection as to the suggestion that [904] was made?

* * *

A. I believe I recommended it not be used.

Q. (By Mr. Howard): What would be the basis of that, Mr. Cross?

A. It is not a good idea to overcome your pressures. There are times when it has to be done. I don't like to do it when the regular pump is fully capable of maintaining the pressures and temperatures that were recommended by the factory without the use of auxiliary equipment.

Q. Mr. Cross, state what you observed as to the efficiency of the operation of the lubricating oil cooler on the portion of the voyage between Manzanillo and Long Beach when the main engine was operated?

Mr. Hokanson: Will you read the question?

(Question read by reporter.)

Mr. Hokanson: I object to the question on the ground that it has already been gone into on direct examination and cross-examination."

The Court: Overruled. [905]

"A. The lubricating oil cooler never gave any trouble at any time as to the efficiency of cooling the lubricating oil.

Mr. Howard: That is all.

Mr. Hokanson: No further questions.

Mr. Howard: Is it stipulated that this deposition need not be read, corrected or signed by the witness, but may be used by either party at the trial with the same effect as though it had been signed?

Mr. Hokanson: So stipulated."

Mr. Howard: This concludes the deposition of Mr. Cross, which I offer in evidence, Your Honor. It was stipulated by counsel that the reading and signing of the deposition by the witness could be waived.

The Court: This deposition is received as a part of cross-libelant's case in chief.

Mr. Howard: I offer the exhibit we have pending, if the Court please, A-17.

The Court: This witness spoke of parts which were not used either at Manzanillo or at Long Beach.

Mr. Howard: I am willing to omit those parts, but it is impossible to take them out of other pages where parts should remain in.

The Court: Can you identify them? [906]

Mr. Howard: Yes, Your Honor.

The Court: Do you agree they can be identified?

Mr. Hokanson: By examination of the deposition, Your Honor, perhaps we can get together.

The Court: After you do that, I will consider it further.

Court is adjourned until tomorrow morning at 10:00 o'clock.

(At 4:04 o'clock p.m., Tuesday, April 12, 1949, proceedings adjourned until 10:00 o'clock a.m. Wednesday, April 13, 1949.)

April 13, 1949, 10:00 o'clock, a.m.

Mr. Howard: We will proceed with the deposition of Mr. George Vernon Roark, page 3 of the large volume of depositions.

The Court: Unless there is something that counsel should mention about what was said there, I would turn to page 4. [907]

Mr. Howard: Line 7, page 4.

DEPOSITION OF GEORGE V. ROARK

By Mr. Howard:

“Q. Will you state your full name and your residence, please?

A. You wish my home address?

Q. Yes, please.

A. My name is George Vernon Roark. I live at 2850 Leeward Avenue, Los Angeles, California.

Q. And by whom are you employed and in what capacity, Mr. Roark?

A. By the Texas Oil Company as a senior engineer in the technical and research division of the refining laboratory.

Q. How long have you been employed by the Texas Oil Company?

A. For about nineteen years and nine months.

Q. Mr. Roark, do you expect to be in Seattle, Washington, on or about April 6, 1949?

(Deposition of George V. Roark.)

A. No, sir, I do not."

Mr. Howard: The witness did agree to the waiving of the reading and signing of the deposition. We can begin on line 14, page 5. [908]

"Q. Mr. Roark, in the course of your services for the Texas Oil Company, did you have occasion from time to time to supervise analysis and report on the technical contents of the analysis of samples of lubricating oil taken from various sources?

A. We actually do not supervise them.

Q. Well, what, if any, relation do you have to such an operation for the Texas Oil Company?

A. With respect to samples, my normal activity is to take a report issued by the laboratory and transmit it to the sales department, with comments which I feel are appropriate.

Q. Do you actually participate in the analysis of samples that are submitted to the company for technical analysis? A. No, sir.

Q. Where is such analysis done in this area, if you know?

A. Normally they are done at our laboratory at the refinery at Wilmington.

Q. And are such samples analyzed frequently?

A. Yes.

Q. And is the analysis performed by the employees of the Texas Oil Company? A. Yes.

Q. What type of report is issued after such an analysis has been made of a sample of oil?

(Deposition of George V. Roark.)

A. I don't understand exactly just what you have in mind.

Q. Well, you have mentioned that a report is issued by the laboratory and it is received by you and then sent to the sales departments with comments that you might make on it.

A. Yes, that is right.

Mr. Howard: I will ask the reporter to mark this document for identification.

(The document in question was marked by the reporter as 'Claimant's and Cross-Libellant's Exhibit S for Identification.')

(Laboratory test report marked Respondent's Exhibit A-20 for Identification.)

"Q. I hand you what has been marked for identification by the reporter as Claimant's and Cross-Libellant's Exhibit S for Identification (handing document to the witness), and I will ask you to state whether or not that represents the usual form of report issued by the Texas Company on samples of oil that are submitted to the company for analysis.

A. This is typical of the reports issued from our offices to other personnel in the Texas Company.

Q. Would that be the type of report that you have previously mentioned as having been sent to the sales department? A. Yes.

Q. Now, what is the source of the information

(Deposition of George V. Roark.)

that is used in compiling such a report—source or sources?

A. Well, by test—that is, the results of tests appearing on these reports are transmitted to our offices from the laboratory.

Q. And the laboratory you speak of is at Wilmington, California? A. Yes.

Q. And these reports are made in the usual course of business? A. That is right.

Q. By your office? A. That is right.

Q. And do you have occasion to make them frequently? A. Yes, sir.

Q. Again calling your attention to the exhibit previously identified, did you yourself participate in the laboratory analysis made of the sample of lubricating oil described therein?

A. No, I actually did not analyze the sample.

Q. Did you receive reports from our Wilmington laboratory as to the analysis of samples made in that case? A. Yes.

Q. Was the report now represented as Claimant's and Cross-Libellant's Exhibit S prepared from such reports?

A. This appears to be a report that I prepared and then signed.

Q. Referring again to this exhibit, Mr. Roark, will you state what is indicated as the source of the oil sample that was analyzed?

The Witness: May I have that again, please?

(Deposition of George V. Roark.)

(The pending question was read by the reporter.)

(No answer by the witness.)

Q. Does the report show where the oil was taken from?

A. The report indicates information supplied to me to the effect that the sample was taken on November 11——

Q. Of what year?

A. 1948—from the bottom of the engine in the vessel indicated in the report.

Q. The various items of analysis as shown in the body of the report—was the information for that obtained from the Wilmington laboratory?

A. Yes, sir.

Q. And from what source did you obtain the information that is used in the comments at the bottom of the report in [912] this exhibit”?

Mr. Hokanson: At this time I lodge an objection covering the testimony of the witness as to this document, and comments, when he has testified that he did not make the analysis himself; it was based upon reports that he received. Comments relating to the vessel and things of that character are beyond his personal knowledge, and therefore certainly should not be admissible.

The Court: The question is, has he proved that this was done in the ordinary course of business, as

(Deposition of George V. Roark.)

he does ordinarily? What do you think about that question, Mr. Hokanson?

Mr. Hokanson: I think it has been established that in the ordinary course of business they make up certain reports, but this witness is not certain. He says this appears to be a report that was prepared and then signed. He has no further knowledge than that.

Mr. Howard: If the Court please, the witness has testified that this report was made in the normal course of business, one of many reports of this type that are made. He has identified the source of the information contained in the reports. I submit this is analogous to the situation where a doctor makes a [913] report based on blood tests or X-rays or things of that nature, where he may not have actually conducted the test or taken the X-ray himself.

The Court: Do you contend it has been established by this witness that a part of his business is to receive from the laboratory department of his own company such reports as this and to transmit them to the sales department, and that in line with that he has done this thing with respect to this particular exhibit?

Mr. Howard: Yes, Your Honor. First he testified on page 5, line 22 to that effect, and subsequently on page 6 he identifies the source of this information within his own company.

The Court: The Court is of the opinion that the testimony of this witness is to the effect con-

(Deposition of George V. Roark.)

tended by respondent as to what this witness ordinarily does as to whether or not this exhibit was issued and distributed by this witness for his company in the ordinary course of the company's business.

The objection is overruled.

“A. The comments were based upon the analysis plus information which I had previously been given on the source [914] of the samples.”

Mr. Hokanson: One further objection for the record. Comments made upon information given by other persons are clearly hearsay, and I don't see how that——

The Court: What other persons? Do you mean outside of his company personnel?

Mr. Hokanson: I think the evidence will show that the information must necessarily have come from outside personnel of the company.

The Court: Mr. Howard, do you wish to respond to that comment?

Mr. Howard: Only to the effect that counsel has cross-examined the witness on that point. If it is true, it will be brought out on the cross-examination. The source of his comments is later examined into by libelants' counsel.

(Deposition of George V. Roark.)

The Court: Temporarily I am going to sustain the objection to the first sentence in the body of this report reading as follows: "The above sample represents oil scooped from bottom of the crank chamber and probably was contaminated by accumulation of rust brought about by water leaking into the oil system."

If it turns out that he in the ordinary course of business made or had made by someone in his company's [915] employ an investigation as to that information contained in that statement, I will reconsider the ruling as to that.

Mr. Howard: Your Honor, I would like to offer the exhibit at this time subject to that.

The Court: Is there anything further you wish to state now that the offer has been made?

Mr. Hokanson: My previous objections to the offer only, Your Honor.

The Court: The objection is overruled, with the exception in respect to which the Court has sustained as to that one sentence, the objection to that one sentence being sustained and that one sentence will not be considered by the Court. The exhibit in all other respects is admitted in evidence.

(Deposition of George V. Roark.)

RESPONDENT'S EXHIBIT A-20

The Texas Company Laboratory Test Report
Los Angeles, California
November 15, 1948

Customer: Compania Naviera Limitada M/V
Urania.

Address: Panama.

Sample No.: D-193934.

Sample of Ursa Oil X-30**, Used. Date Secured:
11/11/48.

Taken from Union Model V-6, 560 h.p. 6 cyl.
Diesel.

Point in system at which sample taken: Crank-
chamber.

Hours Oil in Service: 1.

Appearance	Opaque, Dark green
Odor	Used
Water, %	1.4
Gravity, °API	25.5
Flash, COC, °F.	420
Fire, COC, °F.	490
Viscosity, Univ. (seconds) at 100°F.	545
Neutralization No. (Oxalate)	0.10
Foreign Mineral Matter, %	0.46*

* Principally iron oxide.

The above sample represents oil scooped from
bottom of the crank chamber and probably was con-
taminated by an accumulation of rust brought about
by water leaking into the oil system. Except for

(Deposition of George V. Roark.)

appearance, odor, water and foreign mineral matter the sample gave test results conforming to those of unused Ursa Oil X-30**.

/s/ C. E. EMMON,
Technologist.

GVR-BH

Admitted April 13, 1949.

“Q. But I understand that you did not actually examine the sample itself?

A. That is correct.

Mr. Howard: You may cross-examine.

Cross-Examination

By Mr. Hokanson:

Q. Do you know, Mr. Roark, who reported the facts upon which this report was issued—do you know that? [916]

A. In this case I do not know, but it is normally reported to me by Mr. Hoag of the laboratory.

Q. You wouldn't remember who gave you the report in this case?

A. No, sir; the results were telephoned—the results may have been telephoned by some other person at the laboratory.

Q. Is this a telephonic report that you received?

A. Yes.

Q. Do you know when you received it?

A. No.

(Deposition of George V. Roark.)

Q. Do you know where the oil was obtained, of your own knowledge?

A. Not of my own knowledge, no, sir.

Q. It was reported to you over the telephone by a person unknown except that you would testify that it was an employee of the company?

A. Yes; it was one of our regular sources of information.

I would like to add to that statement, namely, that telephoned reports are confirmed in the normal course of events by a written report. I do not recall whether I received this written form before or after this report, which is dated November 15, 1948, was compiled.

Q. The comments that you enclosed on Claimant's and Libelant's Exhibit S for identification, those comments are [917] strictly hearsay, are they not, as far as you are concerned, are they not?

Mr. Howard: I will object to that question as to whether or not the comment was hearsay. That is a matter involving legal interpretations."

Mr. Howard: I object to that question as calling for a conclusion of the witness.

Mr. Hokanson: The question has been rephrased at the top of page 11, line 4.

"Q. The comment that you make assumes certain facts; is that correct, Mr. Roark?

(Deposition of George V. Roark.)

A. Yes, by comments were made on information supplied from the laboratory and also upon information that I received with reference to the source, the identity of the sample and the conditions under which it was taken.

Q. Well, were all of those facts communicated to you by someone in your laboratory or were other persons involved in communicating this information to you?

A. Samples are not collected by laboratory personnel. This particular sample was collected by one of the employee in the marine department. [918]

Q. Do you remember his name?

A. Yes; it was Don Mackey.

Q. And do you remember that he gave you some of the information upon which you based your assumption for purposes of this comment?

A. Yes, I issued a report indicating the source of the sample and the date it was taken.

Q. So that the comment that you make here is a conclusion that you have drawn based upon information that some other person or persons supplied to you?

A. Yes.

Mr. Hokanson: That is all.

Redirect Examination

By Mr. Howard:

Q. Mr. Roark, it is customary for you to receive such reports from the laboratory in the usual course of business, is it not''?

(Deposition of George V. Roark.)

Mr. Hokanson: That is objected to as improper redirect examination, has already been covered by direct examination.

The Court: The objection is overruled.

“A. Yes, sir, that is right. [919]

Q. It is a routine matter, is it? A. Yes.

Q. It happens frequently? A. Yes.

Mr. Hokanson: I shall object to the last question and also to the answer thereto on the ground that the term “frequently” is so vague that it does not establish anything that would form the basis for an opinion——

Mr. Howard: I will restate the question.

Q. How frequently do you receive such reports in the normal course of events?

A. Very considerably. I believe that samples from ships and other sources run from about 12 to 36 samples per week.

Q. And that is a standard operating procedure in your company to obtain the information from that source”?

Mr. Hokanson: Again, it is repetitious, Your Honor. I move it be stricken.

The Court: The objection is overruled.

(Deposition of George V. Roark.)

“A. Oh, yes.

Q. And then you issue the report on the basis of that [920] information? A. Oh, yes.

Q. Do you have with you this morning, Mr. Roark, a copy of the report that you have mentioned as having been issued by Mr. Don Mackey?

A. Yes, sir.

Q. Could we examine that, please?

A. Yes (handing document to counsel). Pardon me, I thought that was it—I thought I had the report, but apparently I do not.

Q. You wouldn't have it with you, then?

A. Apparently not.

Q. For how long have you been issuing such reports in your position as senior engineer in the technical and research division of the Texas Oil Company at Los Angeles?

A. I have been doing this type of work for approximately 12 years, although I have not had the rating of senior engineer all that time.

Mr. Hokanson: I shall object to the question on the ground that it is repetitious, having been asked in the original direct examination.

Mr. Howard: That is all, Mr. Roark.

Mr. Hokanson: I have no further questions.

Mr. Howard: Thank you very much, Mr. Roark; you are excused now.” [921]

Mr. Howard: That concludes the deposition of this witness.

The Court: What became of the matter to which objection has been stated on line 19?

Mr. Hokanson: Apparently it was not pursued further.

Mr. Howard: At this time I would like to offer this deposition in evidence and ask the Court to rule again as to the admissibility of the document with respect to the first sentence in view of the subsequent testimony of the witness as to the source of his information within the company.

The Court: I have some doubt about it. It can be done any time in the future. I will have to consider it further. I think I should have some authority on this. I cannot see how you would be prejudiced by the Court's not finally ruling upon it at this moment instead of some later time.

Mr. Howard: I am agreeable, Your Honor.

The Court: I will consider it later. I think you should give me some authority on this. Both sides would be invited to furnish the Court some authority respecting your position in the matter.

Mr. Howard: That concludes that deposition.

The Court: That deposition is received as a part of cross libelant's case in chief. [922]

Mr. Howard: I would like to now read the deposition of Mr. M. L. Newell, beginning on page 136.
